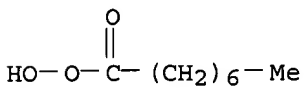
L1 ANSWER 1 OF 2 REGISTRY COPYRIGHT 2002 ACS
RN 33734-57-5 REGISTRY
CN Octaneperoxoic acid (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN **Peroxyoctanoic acid (6CI, 8CI)**
OTHER NAMES:
CN Percaprylic acid
CN Peroctanoic acid
CN Peroxycaprylic acid
FS 3D CONCORD
MF C8 H16 O3
CI COM
LC STN Files: AGRICOLA, BEILSTEIN*, BIOSIS, CA, CAOLD, CAPLUS, CASREACT, CEN, CHEMLIST, CIN, DETHERM*, IFICDB, IFIUDB, PIRA, TOXCENTER, USPATFULL
(*File contains numerically searchable property data)

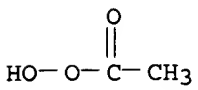


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

80 REFERENCES IN FILE CA (1962 TO DATE)
3 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
80 REFERENCES IN FILE CAPLUS (1962 TO DATE)
4 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L1 ANSWER 2 OF 2 REGISTRY COPYRIGHT 2002 ACS
RN 79-21-0 REGISTRY
CN Ethaneperoxoic acid (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN **Peroxyacetic acid (8CI)**
OTHER NAMES:
CN Acetic peroxide
CN Acetyl hydroperoxide
CN Desoxon 1
CN Estosteril
CN Hydroperoxide, acetyl
CN LCAP
CN Monoperacetic acid
CN Osbon AC
CN Oxigreen 010
CN Oxypel
CN Ozonit
CN Peracetic acid
CN Perethanoic acid
CN Peroxoacetic acid
CN Proxitane 12A
CN Proxitane 1507
CN Proxitane 4002
CN Proxitane S
CN Tsunami
CN Tsunami 100
FS 3D CONCORD
DR 89370-71-8, 232259-02-8
MF C2 H4 O3
CI COM
LC STN Files: AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHEM, CSNB, DDFU, DETHERM*,

DIPPR*, DRUGU, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2,
GMELIN*, HODOC*, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*,
MSDS-OHS, NIOSHTIC, PDLCOM*, PIRA, PROMT, RTECS*, SYNTHLINE, TOXCENTER,
TULSA, ULIDAT, USPAT2, USPATFULL, VETU, VTB
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

3170 REFERENCES IN FILE CA (1962 TO DATE)
46 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
3173 REFERENCES IN FILE CAPLUS (1962 TO DATE)
6 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

=>

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     FILE 'REGISTRY' ENTERED AT 11:04:15 ON 02 DEC 2002
L1             2 S PEROXYACETIC ACID/CN OR PEROXYOCTANOIC ACID/CN

     FILE 'CAPLUS, WPIDS, FSTA' ENTERED AT 11:04:57 ON 02 DEC 2002

     FILE 'REGISTRY' ENTERED AT 11:05:08 ON 02 DEC 2002
                SET SMARTSELECT ON
L2           SEL L1 1- CHEM :      31 TERMS
                SET SMARTSELECT OFF

     FILE 'CAPLUS, WPIDS, FSTA' ENTERED AT 11:05:09 ON 02 DEC 2002
L3          7142 S L2/BI
L4         11490 S (ESCHERICHIA COLI O157? OR E COLI O157? OR LISTERIA MONOCYTOG
L5            43 S L3 AND L4
L6            42 DUP REM L5 (1 DUPLICATE REMOVED)

=> d que l4
L4         11490 SEA (ESCHERICHIA COLI O157? OR E COLI O157? OR LISTERIA
                 MONOCYTOGENES OR L MONOCYTOGENES OF SALMONELLA JAVIANA OR S
                 JAVIANA)
```

L6 ANSWER 1 OF 42 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 1
AN 2002:51176 CAPLUS
DN 136:81313
TI Antimicrobial conc. compns. comprising peroxyacetic and peroxyoctanoic acids for preventing microbial growth on fruits and vegetables and in aqueous food transport and process streams
IN Hilgren, John Dennis; Richter, Francis Lawrence; Salverda, Joy Ann; Hanson, Heidi Margarete; Schacht, Paul Frazer; Gutzmann, Timothy A.
PA Ecolab Inc., USA
SO PCT Int. Appl., 55 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2002003799	A2	20020117	WO 2001-US20209	20010625
WO 2002003799	A3	20020523		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRAI US 2000-614631 A 20000712
AB Amtimicrobial conc. compns. comprise **peroxyacetic acid** and **peroxyoctanoic acid** are used for preventing killing Escherichia coli, **Listeria monocytogenes**, Salmonella javiana, yeast and mold on surface of fruits and vegetables and for preventing microbial growth in aq. streams.
ST antimicrobial peroxyacetic **peroxyoctanoic acid** food processing fruit vegetable
IT Escherichia coli
Listeria monocytogenes
Mold (fungus)
Salmonella javiana
Yeast
(antimicrobial compns. comprising peroxyacetic and peroxyoctanoic acids against)
IT **79-21-0**, **Peroxyacetic acid** 818-85-9, Peroxyheptanoic acid 3058-35-3, Peroxynonanoic acid **33734-57-5**, **Peroxyoctanoic acid**
RL: BUU (Biological use, unclassified); FFD (Food or feed use); BIOL (Biological study); USES (Uses)
(in antimicrobial compns. for fruits and vegetables and aq. food transport and process streams)

L6 ANSWER 2 OF 42 CAPLUS COPYRIGHT 2002 ACS
AN 2002:594617 CAPLUS
DN 137:139703
TI Antimicrobial and irradiation treatments to depress microbial contamination of food
IN Swart, Sally Kay; Kennedy, Shaun Patrick; Harris, Thomas L.
PA Ecolab Inc., USA
SO PCT Int. Appl., 64 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

PI	WO 2002060280	A2	20020808	WO 2002-US3100	20020131

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRAI US 2001-265689P P 20010201
US 2002-43827 A 20020111

AB A method for reducing microbial burden on a food product includes contacting the food product with an antimicrobial agent and irradiating the food product. The system includes an applicator adapted and configured for contacting a food product with an antimicrobial agent and an irradiator adapted and configured for irradiating a food product. The antimicrobial agent may be a peroxycarboxylic acid such as **peroxyacetic acid** or **peroxyoctanoic acid**. An electron beam irradn. dose of 2 kGy pasteurized hot dogs with an incoming burden of .ltoreq.102 cfu **Listeria monocytogenes** g-1.

IT Antimicrobial agents
Electron sources
Food packaging
Food preservation
Fruit
Gamma ray sterilization
Heaters
Listeria monocytogenes
Meat
Pasteurization
Seafood
Seed
Spraying apparatus
Vegetable
(antimicrobial and irradn. treatments to depress microbial contamination of food)

IT **79-21-0, Peroxyacetic acid 33734-57-5, Peroxyoctanoic acid**
RL: FFD (Food or feed use); BIOL (Biological study); USES (Uses)
(antimicrobial and irradn. treatments to depress microbial contamination of food)

L6 ANSWER 3 OF 42 CAPLUS COPYRIGHT 2002 ACS
AN 2002:539451 CAPLUS
DN 137:108630
TI Antimicrobial composition containing peroxycarboxylic acids for washing poultry during processing
IN Hilgren, John D.; Gutzmann, Timothy A.
PA Ecolab Inc., USA
SO PCT Int. Appl., 54 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PI	WO 2002054866	A1	20020718	WO 2001-US51073	20011029

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO,

RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRAI US 2000-738806 A 20001215

RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

AB The present invention relates to compn. including **peroxyacetic acid** and **peroxyoctanoic acid** and methods for reducing microbial contamination on poultry. The methods include the step of applying a mixed peroxycarboxylic acid compn. to poultry.

IT Antimicrobial agents
Chelating agents
Chicken (Gallus domesticus)
Duck
Emu
Escherichia coli
Food contamination
Food processing
Goose
Guinea fowl
Hydrotropes
IR radiation
Light
Listeria monocytogenes
Pheasant
Pigments, nonbiological
Poultry
Quail
Radiation
Salmonella typhimurium
Stabilizing agents
Sterilization and Disinfection
Struthio camelus
Surfactants
Thickening agents
Turkey
UV radiation
Washing
Wetting agents
(antimicrobial compn. contg. peroxycarboxylic acids for washing poultry during processing)

IT 64-19-7, Acetic acid, biological studies **79-21-0**, **Peroxyacetic acid** 124-07-2, Octanoic acid, biological studies 2809-21-4, HEDP 7722-84-1, Hydrogen peroxide, biological studies **33734-57-5**, **Peroxyoctanoic acid**
RL: FFD (Food or feed use); BIOL (Biological study); USES (Uses)
(antimicrobial compn. contg. peroxycarboxylic acids for washing poultry during processing)

L6 ANSWER 4 OF 42 CAPLUS COPYRIGHT 2002 ACS
AN 2002:906130 CAPLUS
TI Biofilm formation by acid-adapted and nonadapted **Listeria monocytogenes** in fresh beef decontamination washings and its subsequent inactivation with sanitizers
AU Stopforth, J. D.; Samelis, J.; Sofos, J. N.; Kendall, P. A.; Smith, G. C.
CS Department of Animal Sciences, Colorado State University, Fort Collins, CO, 80523-1171, USA
SO Journal of Food Protection (2002), 65(11), 1717-1727
CODEN: JFPRDR; ISSN: 0362-028X
PB International Association for Food Protection
DT Journal
LA English

TI Biofilm formation by acid-adapted and nonadapted **Listeria monocytogenes** in fresh beef decontamination washings and its subsequent inactivation with sanitizers

AB The antimicrobial effects of sodium hypochlorite (SH, 200 ppm, at an adjusted pH of 6.80 .+-. 0.20 and at an unadjusted pH of 10.35 .+-. 0.25), quaternary ammonium compd. (pH 10.20 .+-. 0.12, 200 ppm), and **peroxyacetic acid** (PAA, pH 3.45 .+-. 0.20, 150 ppm) on previously acid-adapted or nonadapted **Listeria monocytogenes** inoculated (105 CFU/mL) into beef decontamination water washings were evaluated. The effects of the sanitizers on suspended cells (planktonic or deattached) and on cells attached to stainless steel coupons obtained from inoculated washings stored at 15.degree.C for up to 14 days were studied. Cells were exposed to sanitizers on days 2, 7, and 14. The pathogen had formed a biofilm of 5.3 log CFU/cm2 by day 2 of storage (which was reduced to 4.6 log CFU/cm2 by day 14), while the total microbial populations showed more extensive attachment (6.1 to 6.6 log CFU/cm2). The sanitizers were more effective in reducing populations of cells in suspension than in reducing populations of attached cells. Overall, there were no differences between previously acid-adapted and nonadapted L. monocytogenes with regard to sensitivity to sanitizers. The total microbial biofilms were the most sensitive to all of the sanitizers on day 2, but their resistance increased during storage, and they were at their most resistant on day 14. **Listeria monocytogenes** displayed stronger resistance to the effects of the sanitizers on day 7 than on day 2 but had become sensitized to all sanitizers by day 14. SH at the adjusted pH (6.80) (ASH) was generally more effective in reducing bacterial populations than was SH at the unadjusted pH. PAA generally killed attached cells faster at 30 to 300 s of exposure than did the other sanitizers, except for ASH on day 2. PAA was more effective in killing attached cells than in killing cells treated in suspension, in contrast to the other sanitizers.

L6 ANSWER 5 OF 42 CAPLUS COPYRIGHT 2002 ACS
AN 2002:386190 CAPLUS
DN 137:291510
TI Combined effects of chemical, heat and ultrasound treatments to kill Salmonella and **Escherichia coli O157**:H7 on alfalfa seeds
AU Scouten, A. J.; Beuchat, L. R.
CS Center for Food Safety and Department of Food Science and Technology, University of Georgia, GA, USA
SO Journal of Applied Microbiology (2002), 92(4), 668-674
CODEN: JAMIFK; ISSN: 1364-5072
PB Blackwell Publishing Ltd.
DT Journal
LA English
RE.CNT 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT
TI Combined effects of chemical, heat and ultrasound treatments to kill Salmonella and **Escherichia coli O157**:H7 on alfalfa seeds
AB Aims: To det. the effectiveness of combined treatments with chems., heat and ultrasound in killing or removing Salmonella and **Escherichia coli O157**:H7 on alfalfa seeds intended for sprout prodn. Methods and Results: Alfalfa seeds inoculated with Salmonella or **E. coli O157**:H7 were treated with ultrasound (38.5-40.5 kHz) in solns. contg. 1% Ca(OH)2, 1% Tween 80, 1% Ca(OH)2 plus 1% Tween 80, 160 .mu.g ml-1 **Tsunami** 200 and 0.5% Fit at 23 and 55.degree.C for 2 and 5 min. Highest redns. were in chem. solns. at 55.degree.C, but seed viability was also reduced compared with treatment at 23.degree.C. Inactivation of Salmonella and **E. coli O157**:H7 was generally enhanced by simultaneous treatments with ultrasound, chems. and heat. Conclusions: Ultrasound treatment, in combination with chems. and heat, had a modest enhancing effect on the

effectiveness of chems. in killing or removing pathogens on alfalfa seeds. Overall, treatment with 1% Ca(OH)2 was most effective in killing Salmonella and **E. coli O157**:H7.
Significance and Impact of the Study: The use of 1% Ca(OH)2 instead of 20 000 .mu.g ml-1 chlorine, which is currently recommended as a sanitizer for seeds intended for sprout prodn. in the US, should be considered. Ultrasound treatment of alfalfa seeds contg. Salmonella or **E. coli O157**:H7, in combination with chem. treatment, contributes to achieving greater redns. in populations of these pathogens, thereby reducing the risk of contamination and the presence of pathogens in sprouts produced from these seeds.

IT Alfalfa (Medicago sativa)
Antibacterial agents
Escherichia coli
Food contamination
Heat
Salmonella enterica
Sound and Ultrasound
(chem., heat and ultrasound combined treatments to kill Salmonella and **Escherichia coli O157**:H7 on alfalfa seeds)

IT **79-21-0, Tsunami** 1305-62-0, Calcium hydroxide, biological studies 9005-65-6, Tween 80 51811-76-8, Fit
RL: BSU (Biological study, unclassified); FFD (Food or feed use); BIOL (Biological study); USES (Uses)
(chem., heat and ultrasound combined treatments to kill Salmonella and **Escherichia coli O157**:H7 on alfalfa seeds)

L6 ANSWER 6 OF 42 CAPLUS COPYRIGHT 2002 ACS
AN 2002:274665 CAPLUS
DN 137:19611
TI Combined effects of water activity, temperature and chemical treatments on the survival of Salmonella and **Escherichia coli O157**:H7 on alfalfa seeds
AU Beuchat, L. R.; Scouten, A. J.
CS Center for Food Safety and Department of Food Science and Technology, University of Georgia, Griffin, GA, 30223-1797, USA
SO Journal of Applied Microbiology (2002), 92(3), 382-395
CODEN: JAMIFK; ISSN: 1364-5072
PB Blackwell Publishing Ltd.
DT Journal
LA English
RE.CNT 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT
TI Combined effects of water activity, temperature and chemical treatments on the survival of Salmonella and **Escherichia coli O157**:H7 on alfalfa seeds
AB The objective of this study was to det. the combined effects of water activity (aw), chem. treatment and temp. on Salmonella and **Escherichia coli O157**:H7 inoculated onto alfalfa seeds. Alfalfa seeds inoculated with Salmonella or **E. coli O157**:H7 and adjusted to various aw values were subjected to simultaneous and sep. treatments with chems. and heat. The rate of death of both pathogens was correlated with increased aw (0.15-0.60) and temp. (5-37.degree.C) over a 52-wk storage period. Higher seed aw enhanced the inactivation of pathogens on seeds heated at 50-70.degree.C for up to 24 h. Treatment of seeds with water, 1% Ca(OH)2, 1% Tween 80, 1% Ca(OH)2 plus 1% Tween 80 or 40 mg l-1 **Tsunami** 200 at 23 or 55.degree.C for 2 min significantly (.alpha. = 0.05) reduced populations of Salmonella and **E. coli O157**:H7. Overall, at the combinations of temp. and concns. of chems. tested, 1% Ca(OH)2 was most effective in killing Salmonella and **E. coli O157**:H7 without reducing seed viability. None of the treatments evaluated in this study, whether applied sep. or in combination, eliminated Salmonella or **E. coli**

O157:H7 on alfalfa seeds without sacrificing the viability of the seeds. It remains essential that practices to prevent the contamination of alfalfa seeds be strictly followed in order to minimize the risk of Salmonella and **E. coli O157**:H7 infections assocd. with sprouts produced from these seeds.

IT Activity (thermodynamic)
Alfalfa (Medicago sativa)
Escherichia coli
Food contamination
Salmonella
Seed
Sterilization and Disinfection
(combined effects of water activity, temp., and chem. treatments on the survival of Salmonella and **Escherichia coli O157**:H7 on alfalfa seeds)

IT Temperature effects, biological
(heat; combined effects of water activity, temp., and chem. treatments on the survival of Salmonella and **Escherichia coli O157**:H7 on alfalfa seeds)

IT **79-21-0**, **Tsunami** 1305-62-0, Calcium hydroxide, biological studies 9005-65-6, Tween 80
RL: BSU (Biological study, unclassified); FFD (Food or feed use); BIOL (Biological study); USES (Uses)
(combined effects of water activity, temp., and chem. treatments on the survival of Salmonella and **Escherichia coli O157**:H7 on alfalfa seeds)

IT 7732-18-5, Water, biological studies
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(combined effects of water activity, temp., and chem. treatments on the survival of Salmonella and **Escherichia coli O157**:H7 on alfalfa seeds)

L6 ANSWER 7 OF 42 FSTA COPYRIGHT 2002 IFIS
AN 2002:J2044 FSTA
TI Combined effects of chemical, heat and ultrasound treatments to kill Salmonella and **Escherichia coli O157**:H7 on alfalfa seeds.
AU Scouten, A. J.; Beuchat, L. R.
CS Correspondence (Reprint) address, L. R. Beuchat, Cent. for Food Safety & Dep. of Food Sci. & Tech., Univ. of Georgia, Griffin, GA 30223-1797, USA. E-mail lbeuchat(a)cfs.griffin.peachnet.edu
SO Journal of Applied Microbiology, (2002), 92 (4) 668-674, 19 ref.
ISSN: 1364-5072
DT Journal
LA English
TI Combined effects of chemical, heat and ultrasound treatments to kill Salmonella and **Escherichia coli O157**:H7 on alfalfa seeds.
AB The effectiveness of combined treatment with chemicals, heat and ultrasound at killing or removing Salmonella and **Escherichia coli O157**:H7 on alfalfa seeds intended for sprout production was investigated. Alfalfa seeds inoculated with Salmonella or **E. coli O157**:H7 were treated with ultrasound (38.5-40.5 kHz) in solutions containing 1% Ca(OH).sub.2, 1% Tween 80, 1% Ca(OH).sub.2 plus 1% Tween 80, 160 .mu.g ml.sup.-.sup.1 **Tsunami** .RTM. 200 (Ecolab) and 0.5% Fit.RTM. (Procter ad Gamble Co.) at 23 and 55.degree.C for 2 and 5 min. Highest reductions were in chemical solutions at 55.degree.C, but seed viability was also reduced compared with treatment at 23.degree.C. Inactivation of Salmonella and **E . coli O157**:H7 was generally enhanced by simultaneous treatment with ultrasound, chemicals and heat. Ultrasound treatment, in combination with chemicals and heat, had a modest enhancing effect on the effectiveness of chemicals in killing or removing pathogens on alfalfa

seeds., Overall, treatment with 1% Ca(OH).sub.2 was most effective in killing Salmonella and **E. coli O157**:H7. It is suggested that the use of 1% Ca(OH).sub.2 instead of 20 000 .mu.g ml.sup.-.sup.1 chlorine, which is currrently recommended as a sanitizer for seeds intended for sprout production in the US, should be considered. Ulrasound treatment of alfalfa seeds containing Salmonella or E. coli O147:H7, in combination with chemical treatment, contributes to achieving greater reductions in populations of these pathogens, thereby reducing the risk of contamination and the presence of pathogens in sprouts produced from these seeds.

L6 ANSWER 8 OF 42 FSTA COPYRIGHT 2002 IFIS
AN 2002:J2043 FSTA
TI Combined effects of water activity, temperature and chemical treatments on the survival of Salmonella and **Escherichia coli O157**:H7 on alfalfa seeds.
AU Beuchat, L. R.; Scouten, A. J.
CS Cent. for Food Safety & Dep. of Food Sci. & Tech., Univ. of Georgia, Griffin, GA 30223-1797, USA. E-mail lbeuchat(a)cfs.griffin.peachnet.edu
SO Journal of Applied Microbiology, (2002), 92 (3) 382-395, 29 ref.
ISSN: 1364-5072
DT Journal
LA English
TI Combined effects of water activity, temperature and chemical treatments on the survival of Salmonella and **Escherichia coli O157**:H7 on alfalfa seeds.
AB The combined effects of water activity (a.sub.w), chemical treatment and temp. on Salmonella and **Escherichia coli O157**:H7 inoculated onto alfalfa seeds were investigated. Alfalfa seeds inoculated with Salmonella or **E. coli O157**:H7 and adjusted to various a.sub.w values were subjected to simultaneous and separate treatments with chemicals and heat. The rate of death of both pathogens was correlated with increased a.sub.w (0.15-0.60) and temp. (5-37.degree.C) over a 52 wk storage period. Higher seed a.sub.w enhanced the inactivation of pathogens on seeds heated at 50-70.degree.C for up to 24 h. Treatment of seeds with water, 1% Ca(OH).sub.2, 1% Tween 80, 1% Ca(OH).sub.2 plus 1% Tween 80 or 40 mg l.sup.-.sup.1 **Tsunami** 200.RTM. (Ecolab) at 23 or 55.degree.C for 2 min significantly (.alpha. = 0.05) reduced populations of Salmonella and **E. coli O157**:H7. Overall, at the combinations of temp. and concn. of chemicals tested, 1% Ca(OH).sub.2 was most effective in killing Salmonella and **E. coli O157**:H7 without reducing seed viability. None of the treatments evaluated in this study, whether applied separately or in combination, eliminated Salmonella or **E. coli O157**:H7 on alfalfa seeds without sacrificing the viability of the seeds. It remains essential that practices to prevent contamination of alfalfa seeds be followed strictly in order to minimize the risk of Salmonella and **E. coli O157**:H7 infections associated with sprouts produced from these seeds.
TN Ecolab; **Tsunami 200**

L6 ANSWER 9 OF 42 CAPLUS COPYRIGHT 2002 ACS
AN 2001:63780 CAPLUS
DN 134:115068
TI Surface decontamination of frankfurters, other cooked sausage, processed meat, and poultry products
IN Marsden, James L.; Krieger, Eric W.; Schwartz, Lewis I.; Greszler, Alan J.; Sanford, Bill R.
PA Steris Inc., USA
SO PCT Int. Appl., 40 pp.
CODEN: PIXXD2
DT Patent
LA English

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001005255	A1	20010125	WO 2000-US19172	20000714

RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE

PRAI US 1999-143892P P 19990714

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

AB Food products, such as precooked meats, raw meats, and poultry are treated with a decontaminant soln. to remove surface microorganism contamination. The decontaminant soln. contains **peracetic acid** at a concn. of from about 100 to 4000 ppm and has broad spectrum activity against a variety of pathogenic and spoilage microorganisms, such as **Listeria monocytogenes**.

IT **79-21-0**, **Peracetic acid**
RL: BPR (Biological process); BSU (Biological study, unclassified); FFD (Food or feed use); BIOL (Biological study); PROC (Process); USES (Uses)
(in surface decontamination of frankfurters, other cooked sausage, processed meat, and poultry products)

L6 ANSWER 10 OF 42 CAPLUS COPYRIGHT 2002 ACS
AN 2001:785133 CAPLUS
DN 136:308813
TI Efficacy of chitosan, carvacrol, and a hydrogen peroxide-based biocide against foodborne microorganisms in suspension and adhered to stainless steel
AU Knowles, James; Roller, Sibel
CS School of Applied Science, South Bank University, London, SE1 0AA, UK
SO Journal of Food Protection (2001), 64(10), 1542-1548
CODEN: JFPRDR; ISSN: 0362-028X
PB International Association for Food Protection
DT Journal
LA English

RE.CNT 49 THERE ARE 49 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

AB The ability of natural compds. to inactivate foodborne organisms adhered to surfaces was investigated with the ultimate aim of replacing synthetic biocides by more environmentally friendly, natural alternatives. The antimicrobial efficacy of 0.5, 1.0, and 2.0% chitosan and Spor-Klenz RTU (a com. biocide based on hydrogen peroxide and **peroxyacetic acid**) and 0.5, 1.25, and 2.0 mM carvacrol was detd. at 20.degree.C against **Listeria monocytogenes**, Salmonella enterica typhimurium, Staphylococcus aureus, and Saccharomyces cerevisiae adhered to stainless steel disks. Treatment with up to 2.0% chitosan reduced the viable cell count in the microbial films of the four test organisms by 2.4, 1.8, 2.3, and 0.9 log CFU/test surface (t.s.), resp. By contrast, planktonic counts of the same organisms were reduced by 0.8 to 1.7 log CFU/mL at 2.0% chitosan. Treatment with 2 mM carvacrol reduced the viable counts of adhered listeriae, salmonellae, and yeasts by 2 to 3 log CFU/t.s. but S. aureus counts were reduced by only 0.9 log CFU/t.s. The efficacy of any single compd. was species specific. In the case of microbial films prepd. using listeriae and salmonellae, Spor-Klenz RTU was most biocidal, followed by carvacrol and then chitosan. However, dried films of S. aureus were most sensitive to chitosan and relatively resistant to carvacrol and Spor-Klenz RTU. By contrast, yeast films were most sensitive to carvacrol and least sensitive to chitosan. It was concluded that carvacrol and chitosan may have potential for use as natural biocides although optimization of conditions would be necessary.

IT Biocides
Food contamination
Listeria monocytogenes
Saccharomyces cerevisiae
Salmonella enterica typhimurium

Staphylococcus aureus
Sterilization and Disinfection
(efficacy of chitosan, carvacrol, and hydrogen peroxide-based biocide against foodborne microorganisms in suspension and adhered to stainless steel)

L6 ANSWER 11 OF 42 CAPLUS COPYRIGHT 2002 ACS
AN 2001:586178 CAPLUS
DN 135:300909
TI Sublethal sanitizer stress and adaptive response of Escherichia coli O 157:H7
AU Zook, C. D.; Busta, F. F.; Brady, L. J.
CS The Department of Food Science and Nutrition, The University of Minnesota, St. Paul, MA, 55108, USA
SO Journal of Food Protection (2001), 64(6), 767-769
CODEN: JFPRDR; ISSN: 0362-028X
PB International Association for Food Protection
DT Journal
LA English
RE.CNT 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT
AB The effect of sublethal exposure to **peroxyacetic acid** (PAA) sanitizer on adaptation to peroxidative stress and development of thermal cross-resistance was investigated in **Escherichia coli O157**:H7. Acute sublethal PAA sanitizer exposure was used to represent a contact scenario. Cultures were grown in Trypticase soy-yeast ext. broth. Acute treatment cultures were pretreated with 0.1% PAA, then all cultures were challenged at either 80 mM H2O2 or 54.degree.C. Acute and peroxide control cultures showed substantially increased peroxidative tolerance (D80mM > 2 h) vs. neg. control cultures not exposed to sanitizer (D80mM = 0.19 .+-. 0.03 h). The inactivation rate of the acetic acid control (D80mM = 0.21 .+-. 0.05 h) was similar to the neg. control rate. Acute (D54.degree.C = 0.55 .+-. 0.07 h) cultures did not exhibit increased thermal resistance vs. the control (D54.degree.C = 0.54 .+-. 0.07 h). Thermal injury was detd. as difference in D54.degree.C value (.DELTA.D54.degree.C) obtained on pyruvate and deoxycholate media. Thermal-induced injury was not obsd. in either control (.DELTA.D54.degree.C = 0.04 h) or acute (.DELTA.D54.degree.C = 0.05 h) cultures.
IT **79-21-0**, **Peroxyacetic acid**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(sublethal sanitizer stress and adaptive response of Escherichia coli)

L6 ANSWER 12 OF 42 CAPLUS COPYRIGHT 2002 ACS
AN 2001:816121 CAPLUS
DN 136:84911
TI Efficacy testing of commercial disinfectants against foodborne pathogenic and spoilage microbes in biofilm-constructs
AU Wirtanen, Gun; Aalto, Mervi; Harkonen, Paivi; Gilbert, Peter; Mattila-Sandholm, Tiina
CS VTT Biotechnology, Espoo, Finland
SO European Food Research and Technology (2001), 213(4-5), 409-414
CODEN: EFRTFO; ISSN: 1438-2377
PB Springer-Verlag
DT Journal
LA English
RE.CNT 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT
AB This paper describes the evaluation of poloxamer-hydrogel biofilm-constructs for the routine efficacy testing of disinfectants at normal use strength. Aq. solns. of poloxamer Pluronic F127 show thermoreversible gelation, being liq. at temps. <15.degree. but firm gels at temps. >15.degree.. Chilled poloxamer solns. (30% w/v) were made up in

a tryptone soy broth and inoculated with stationary-phase cultures of 14 foodborne spoilage microbes, including Pseudomonas, Bacillus, Staphylococcus, Micrococcus, enterobacteria and a yeast, as well as pathogen test-strains, including Listeria and Salmonella. Drops (either 200 .mu.l or 100 .mu.l) were placed onto pre-warmed, sterile, stainless steel disks held in sealed Petri dishes. The constructs were incubated for 5 h at 30.degree. and all strains grew well in the poloxamer hydrogel. Incubatel poloxamer gels and their disks were transferred to solns. of com. disinfectant formulations contg. either amphoteric surfactants, hydrogen peroxide with **peracetic acid** or silver ions, sodium hypochlorite, or alcs. with and without additives. After 5 min at 25.degree. the test pieces were removed from the disinfectant soln. and transferred to a neutralizer at 10-15.degree.. These tests were carried out in triplicate. The gels dispersed rapidly, releasing the cells and enabling a count of the viable cells. All formulations effected a >5-log kill of planktonic challenges within 5 min. An effective killing of microbial cells within the biofilm-constructs was shown when the redn. was at least 0.3 log units. The results were highly reproducible, with patterns of susceptibility varying as a function of the organism, disinfectant type, and concn. The expts. support the view that poloxamer hydrogels can be used for testing the disinfectant efficacy of various formulations against contaminants isolated from food and drink processes.

IT Bacillus subtilis
Dekkera anomala
Disinfectants
Enterobacter
Escherichia coli
Hydrogels
Listeria innocua
Listeria monocytogenes
Micrococcus luteus
Microorganism
Pathogen
Pseudomonas aeruginosa
Pseudomonas fluorescens
Pseudomonas fragi
Salmonella typhimurium
Salmonella worthington
Staphylococcus epidermidis
(efficacy testing of com. disinfectants against foodborne pathogenic and spoilage microbes in biofilm-constructs)

L6 ANSWER 13 OF 42 FSTA COPYRIGHT 2002 IFIS
AN 2002:C0052 FSTA
TI Efficacy of chitosan, carvacrol, and a hydrogen peroxide-based biocide against foodborne microorganisms in suspension and adhered to stainless steel.
AU Knowles, J.; Roller, S.
CS Correspondence (Reprint) address, S. Roller, Sch. of Applied Sci., South Bank Univ., London SE1 0AA, UK. Tel. 44 20 7815 7961. Fax 44 20 7815 7999. E-mail rollers(a)sbu.ac.uk
SO Journal of Food Protection, (2001), 64 (10) 1542-1548, 49 ref.
ISSN: 0362-028X
DT Journal
LA English
AB The ability of natural compounds to inactivate foodborne organisms adhered to surfaces was investigated with the ultimate aim of replacing synthetic biocides with more environmentally friendly, natural alternatives. The antimicrobial efficacy of 0.5, 1.0 and 2.0% chitosan and Spor-Klenz RTU (a commercial biocide based on hydrogen peroxide and **peroxyacetic acid**), and 0.5, 1.25 and 2.0mM carvacrol was determined at 20.degree.C against **Listeria monocytogenes**, Salmonella enterica serovar Typhimurium, Staphylococcus aureus and Saccharomyces cerevisiae adhered to stainless steel disks. Treatment with up to 2.0%

chitosan reduced the viable cell count in the microbial films of the 4 test organisms by 2.4, 1.8, 2.3 and 0.9 log cfu/test surface (ts), respectively. By contrast, planktonic counts of the same organisms were reduced by 0.8-1.7 log cfu/ml at 2.0% chitosan. Treatment with 2mM carvacrol reduced the viable counts of adhered listeriae, salmonellae and yeasts by 2-3 log cfu/ts, but S. aureus counts were reduced by only 0.9 log cfu/ts. The efficacy of any single compound was species specific. In the case of microbial films prepared using listeriae and salmonellae, Spor-Klenz RTU was most biocidal, followed by carvacrol and then chitosan. However, dried films of S. aureus were most sensitive to chitosan and relatively resistant to carvacrol and Spor-Klenz RTU. In contrast, yeast films were most sensitive to carvacrol and least sensitive to chitosan. It is concluded that carvacrol and chitosan may have potential for use as natural biocides although optimization of conditions would be necessary.

CT BACTERIA; FLAVOUR COMPOUNDS; FOOD SAFETY; INHIBITION; LISTERIA; PHENOLS; POLYSACCHARIDES; SACCHAROMYCES; SALMONELLA; STAPHYLOCOCCUS; SURFACES; TERPENOIDS; ANTIBACTERIAL ACTIVITY; BIOCIDES; CARVACROL; CHITOSAN; **LISTERIA MONOCYTOGENES**; SACCHAROMYCES CEREVISIAE; SALMONELLA ENTERICA; STAPHYLOCOCCUS AUREUS

L6 ANSWER 14 OF 42 FSTA COPYRIGHT 2002 IFIS
AN 2001(09):C1175 FSTA
TI Sublethal sanitizer stress and adaptive response of **Escherichia coli O157**:H7.
AU Zook, C. D.; Busta, F. F.; Brady, L. J.
CS Dep. of Food Sci. & Nutr., Univ. of Minnesota, St. Paul, MN 55108, USA. Tel. 612-624-4979. Fax 612-625-5272. E-mail zook0002(a)tc.umn.edu
SO Journal of Food Protection, (2001), 64 (6) 767-769, 12 ref. ISSN: 0362-028X
DT Journal
LA English
TI Sublethal sanitizer stress and adaptive response of **Escherichia coli O157**:H7.
AB Effect of sublethal exposure to **peroxyacetic acid** (PAA) sanitizer on adaptation to peroxidative stress and development of thermal cross-resistance was investigated in **Escherichia coli O157**:H7. Acute sublethal PAA sanitizer exposure was used to represent a contact scenario. Cultures of **E. coli O157**:H7 were grown in trypticase soy-yeast extract broth. Acute treatment cultures were pretreated with 0.1% PAA, then all cultures were challenged with either 80mM H.sub.2O.sub.2 or a temp. of 54.degree.C. Acute and peroxide control cultures showed substantially increased peroxidative tolerance (D.sub.8.sub.0.sub.m.sub.M > 2 h) compared to negative control cultures not exposed to sanitizer (D.sub.8.sub.0.sub.m.sub.M = 0.19 .+-. 0.03 h). The inactivation rate of the PAA control (D.sub.8.sub.0.sub.m.sub.M = 0.21 .+-. 0.05 h) was similar to the negative control rate. Acute cultures (D.sub.5.sub.4.sub..degree..sub.C = 0.55 .+-. 0.07 h) did not exhibit increased heat resistance compared to the control (D.sub.5.sub.4.sub..degree..sub.C = 0.54 .+-. 0.07 h). Thermal injury, determined as the difference in D.sub.5.sub.4.sub..degree..sub.C value (.DELTA.D.sub.5.sub.4.sub..degree..sub.C) obtained on pyruvate and deoxycholate media, was not observed in either control (.DELTA.D.sub.5.sub.4.sub..degree..sub.C = 0.04 h) or acute (.DELTA.D.sub.5.sub.4.sub..degree..sub.C = 0.05 h) cultures.

L6 ANSWER 15 OF 42 CAPLUS COPYRIGHT 2002 ACS
AN 2001:700428 CAPLUS
DN 136:231463
TI Reduction of **Escherichia coli O157**:H7 counts on whole fresh apples by treatment with sanitizers
AU Wisniewsky, Marcy A.; Glatz, Bonita A.; Gleason, Mark L.; Reitmeier, Cheryll A.
CS Department of Food Science and Human Nutrition, Iowa State University,

Ames, IA, 50011, USA
SO Journal of Food Protection (2000), 63(6), 703-708
CODEN: JFPRDR; ISSN: 0362-028X
PB International Association for Food Protection
DT Journal
LA English
RE.CNT 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT
TI Reduction of **Escherichia coli O157**:H7 counts on whole fresh apples by treatment with sanitizers
AB A study was made to det. if washing of whole apples with solns. of three different sanitizers (**peroxyacetic acid**, chlorine dioxide, or a chlorine-phosphate buffer soln.) could reduce a contaminating nonpathogenic **Escherichia coli O157**:H7 population by 5 logs and at what sanitizer concn. and wash time such a redn. could be achieved. Sanitizers were tested at 1, 2, 4, 8, and 16 times the manufacturer's recommended concn. at wash times of 5, 10, and 15 min. Whole, sound Braeburn apples were inoculated with approx. 1 .times. 108 or 7 .times. 106 CFU per apple, stored for 24 h, then washed with sterile water (control) or with sanitizers for the prescribed time. Recovered bacteria were enumerated on trypticase soy agar. Washing with water alone reduced the recoverable population by almost 2 logs from the starting population; this can be attributed to phys. removal of organisms from the apple surface. No sanitizer, when used at the recommended concn., reduced the recovered E. coli population by 5 logs under the test conditions. The most effective sanitizer, **peroxyacetic acid**, achieved a 5-log redn. when used at 2.1 to 14 times its recommended concn., depending on the length of the wash time. The chlorine-phosphate buffer soln. reduced the population by 5 logs when used at 3 to 15 times its recommended concn., depending on wash time. At no concn. or wash time tested did chlorine dioxide achieve the 5-log redn.
ST apple Escherichia sanitizer; **peroxyacetic acid** apple Escherichia sanitizer
IT **Escherichia coli**
(**O157**:H7; sanitizer redn. of **Escherichia coli O157**:H7 counts on whole fresh apples)
IT Apple
Disinfectants
(sanitizer redn. of **Escherichia coli O157**:H7 counts on whole fresh apples)
IT 7681-52-9, Sodium hypochlorite
RL: FFD (Food or feed use); BIOL (Biological study); USES (Uses)
(AgClor 310; sanitizer redn. of **Escherichia coli O157**:H7 counts on whole fresh apples)
IT **79-21-0**, **Tsunami 100** 10049-04-4, Chlorine dioxide
RL: FFD (Food or feed use); BIOL (Biological study); USES (Uses)
(sanitizer redn. of **Escherichia coli O157**:H7 counts on whole fresh apples)

L6 ANSWER 16 OF 42 CAPLUS COPYRIGHT 2002 ACS
AN 2001:74112 CAPLUS
DN 134:307792
TI Bactericidal efficiencies of commercial disinfectants against **Listeria monocytogenes** on surfaces
AU Aarnisalo, Kaarina; Salo, Satu; Miettinen, Hanna; Suihko, Maija-Liisa; Wirtanen, Gun; Autio, Tiina; Lunden, Janne; Korkeala, Hannu; Sjoberg, Anna-Maija
CS VTT Biotechnology, VTT, FIN-02044, Finland
SO Journal of Food Safety (2000), 20(4), 237-250
CODEN: JFSADP; ISSN: 0149-6085
PB Food & Nutrition Press, Inc.
DT Journal
LA English

RE.CNT 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

TI Bactericidal efficiencies of commercial disinfectants against **Listeria monocytogenes** on surfaces

AB The efficiencies of K persulfate, isopropanol, H2O2, and **peracetic acid**, quaternary ammonium compd., hypochlorite, Na dichloroisocyanurate, EtOH, and phenol derivs., tertiary alkylamines, and di-Me alamine betaine-based disinfectants and a hypochlorite-based disinfecting cleaning agent were evaluated against 8 **Listeria monocytogenes** strains representing 3 different ribotypes. All the disinfectants were effective in a suspension test with an exposure time of 30 s at the lowest concns. recommended by the manufacturer. The efficiencies on surfaces were reduced. However, on clean surfaces all the agents were considered effective when the exposure time was 5 min and the concn. was the av. recommended by the manufacturer. 5 Of 9 disinfectants and the disinfecting cleaning agent were considered effective in soiled conditions in the surface test. The most efficient agent was isopropanol-based and the least effective was the disinfectant contg. tertiary alkylamine and di-Me alamine betaine. Differences in bactericidal efficiencies of disinfectants against different L. monocytogenes strains on meat soiled surfaces were found.

IT rRNA
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(RT-1, RT-2, RT-3; bactericidal efficiencies of com. disinfectants against **Listeria monocytogenes** ribotypes on surfaces)

IT Surfactants
(anionic; antimicrobial components com. disinfectants and the bactericidal efficiencies of these disinfectants against **Listeria monocytogenes** on surfaces)

IT Amine oxides
Quaternary ammonium compounds, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(antimicrobial components com. disinfectants and the bactericidal efficiencies of these disinfectants against **Listeria monocytogenes** on surfaces)

IT Antibacterial agents
Disinfectants
Listeria monocytogenes
(bactericidal efficiencies of com. disinfectants against **Listeria monocytogenes** on surfaces)

IT Amines, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(tertiary; antimicrobial components com. disinfectants and the bactericidal efficiencies of these disinfectants against **Listeria monocytogenes** on surfaces)

IT 64-17-5, Ethanol, biological studies 67-63-0, Isopropanol, biological studies 77-92-9, Citric acid, biological studies **79-21-0**, **Peracetic acid** 108-95-2D, Phenol, derivs., biological studies 1310-73-2, Sodium hydroxide, biological studies 5329-14-6, Sulfamic acid 7681-52-9, Sodium hypochlorite 7722-84-1, Hydrogen peroxide, biological studies 7727-21-1, Potassium persulfate 69824-08-4
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(antimicrobial components com. disinfectants and the bactericidal efficiencies of these disinfectants against **Listeria monocytogenes** on surfaces)

IT 107-43-7, Betaine 58318-36-8, Alamine
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(di-Me alamine betaine; antimicrobial components com. disinfectants and

the bactericidal efficiencies of these disinfectants against **Listeria monocytogenes** on surfaces)

L6 ANSWER 17 OF 42 FSTA COPYRIGHT 2002 IFIS
AN 2000(09):J1922 FSTA
TI Reduction of **Escherichia coli O157**:H7 counts on whole fresh apples by treatment with sanitizers.
AU Wisniewsky, M. A.; Glatz, B. A.; Gleason, M. L.; Reitmeier, C. A.
CS Correspondence (Reprint) address, B. A. Glatz, Dep. of Food Sci. & Human Nutr., Iowa State Univ., Ames, IA 50011, USA. Tel. 515-294-3970. Fax 515-294-8181. E-mail bglatz(a)iastate.edu
SO Journal of Food Protection, (2000), 63 (6) 703-708, 19 ref.
ISSN: 0362-028X
DT Journal
LA English
TI Reduction of **Escherichia coli O157**:H7 counts on whole fresh apples by treatment with sanitizers.
AB This study sought to determine if washing of whole apples with solutions of 3 different sanitizers (**peroxyacetic acid**, chlorine dioxide or a chlorine-phosphate buffer solution), used at 1, 2, 4, 8 and 16x the manufacturer's recommended concn. at wash times of 5, 10 and 15 min, could reduce a contaminating nonpathogenic **Escherichia coli O157**:H7 population by 5 logs. Whole, sound Braeburn apples were inoculated with approx. 1 x 10.sup.8 or 7 x 10.sup.6 cfu/apple, stored for 24 h, then washed with sterile water (control) or with sanitizers for the prescribed time. Recovered bacteria were enumerated on trypticase soy agar. Results showed that washing with water alone reduced the recoverable population by almost 2 logs from the starting population; this could be attributed to physical removal of organisms from the apple surface. No sanitizer, when used at the recommended concn., reduced the recovered E. coli population by 5 logs under the test conditions. The most effective sanitizer, **peroxyacetic acid**, achieved a 5-log reduction when used at 2.1-14x its recommended concn., depending on the length of the wash time. The chlorine-phosphate buffer solution reduced the population by 5 logs when used at 3-15x its recommended concn., depending on wash time. At no concn. or wash time tested did chlorine dioxide achieve the 5-log reduction.

L6 ANSWER 18 OF 42 FSTA COPYRIGHT 2002 IFIS
AN 2000(06):H1320 FSTA
TI Reduction of **Escherichia coli O157**:H7 on apples using wash and chemical sanitizer treatments.
AU Wright, J. R.; Sumner, S. S.; Hackney, C. R.; Pierson, M. D.; Zoecklein, B. W.
CS Correspondence (Reprint) address, S. S. Sumner, Dep. of Food Sci. & Tech., Virginia Polytech. Inst. & State Univ., Blacksburg, VA 24061, USA. Tel. 540.231.5280. Fax 540.231.9293. E-mail sumners(a)vt.edu
SO Dairy, Food and Environmental Sanitation, (2000), 20 (2) 120-126, 38 ref.
ISSN: 0273-2866
DT Journal
LA English
TI Reduction of **Escherichia coli O157**:H7 on apples using wash and chemical sanitizer treatments.
AB Unpasteurized apple cider has been implicated in outbreaks involving **Escherichia coli O157**:H7. Apples used for cider production may become contaminated by contact with animal faeces. Use of wash and sanitizer treatments to reduce or eliminate **E. coli O157**:H7 on apples was evaluated. Apples were subjected to 6 treatments: 200 p.p.m. hypochlorite, a commercial phosphoric acid fruit wash, 5% acetic acid, 5% acetic acid followed by 3% H.sub.2O.sub.2, a commercial **peroxyacetic acid** sanitizer, and distilled water. Apples inoculated with a 5-strain mixture of **E. coli O157**:H7 (380-94, 933, 07927,

E0019 and E09) at approx. 2 x 10.sup.3 cfu/cm.sup.2 were immersed in treatments for 2 min. The water wash caused a reduction of only 1.1 log units when bacterial cells were enumerated on Sorbitol MacConkey agar (SMAC) and 0.6 log units when Tryptone Soy agar with 1% pyruvic acid (TSAP) was used and was the only treatment that did not differ significantly from the no-wash control. Hypochlorite caused a reduction of 2.1 log units on both media but differed significantly from the most effective treatment, 5% acetic acid. Phosphoric acid resulted in a reduction of 2.9 log units when TSAP was the recovery medium, indicating that the treatment caused some sublethal injury. For the acetic acid/H.sub.2O.sub.2 treatment, a reduction of 2.5 log units with SMAC and 2.4 log units with TSAP was observed. 5% acetic acid and **peroxyacetic acid** solutions were the most effective, causing reduction of 3.1 and 2.6 log units, respectively, without apparent sublethal injury.

L6 ANSWER 19 OF 42 FSTA COPYRIGHT 2002 IFIS
AN 2001(05):C0588 FSTA
TI Bactericidal efficiencies of commercial disinfectants against **Listeria monocytogenes** on surfaces.
AU Aarnisalo, K.; Salo, S.; Miettinen, H.; Suihko, M. L.; Wirtanen, G.; Autio, T.; Lunden, J.; Korkeala, H.; Sjoberg, A. M.
CS VTT Biotechnology, PO Box 1500, FIN-02044 VTT, Finland. Tel. 358 9 4567126. Fax 358 9 4552103. E-mail Kaarina.Aarnisalo(a)vtt.fi
SO Journal of Food Safety, (2000), 20 (4) 237-250, 26 ref.
ISSN: 0149-6085
DT Journal
LA English
TI Bactericidal efficiencies of commercial disinfectants against **Listeria monocytogenes** on surfaces.
AB Efficiencies of 9 commercial disinfectants containing various active agents (potassium persulphate, isopropanol, hydrogen peroxide plus **peracetic acid**, quaternary ammonium compound, hypochlorite, sodium dichloroisocyanurate, ethanol plus phenol derivatives, tertiary alkylamines and dimethyl alamine betaine) and a hypochlorite-based disinfecting cleaning agent were evaluated against 8 **Listeria monocytogenes** strains, representing 3 different ribotypes, on clean and meat-soiled stainless steel surfaces. All disinfectants were effective in an initial suspension test with an exposure time of 30 s at the lowest concn. recommended by the manufacturer, however, efficiencies on surfaces were found to be reduced. On clean surfaces, all disinfectants were considered effective when the exposure time was 5 min and the concn. was the average recommended by the manufacturer. 5 of 9 disinfectants and the disinfecting cleaning agent were considered effective on soiled surfaces. The most efficient disinfectant was isopropanol-based, and the least effective were the disinfectants containing tertiary alkylamine and dimethyl alamine betaine. Differences in bactericidal efficiencies of disinfectants against different L. monocytogenes strains on meat-soiled surfaces were found.
CT BACTERIA; CLEANING; DISINFECTION; FOOD SAFETY; INHIBITION; LISTERIA; SURFACES; ANTIBACTERIAL ACTIVITY; CLEANING AGENTS; DISINFECTANTS; **LISTERIA MONOCYTOGENES**

L6 ANSWER 20 OF 42 CAPLUS COPYRIGHT 2002 ACS
AN 1999:483382 CAPLUS
DN 131:101552
TI Fresh produce wash for increasing shelf life
IN Green, Bruce Phillip
PA Health and Hygiene International Pty. Ltd., Australia
SO PCT Int. Appl., 28 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9937172	A1	19990729	WO 1999-AU46	19990121
	W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	ZA 9900446	A	19990721	ZA 1999-446	19990121
	AU 9921439	A1	19990809	AU 1999-21439	19990121
PRAI	AU 1998-1465	A	19980121		
	WO 1999-AU46	W	19990121		

RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

IT Antimicrobial agents
Apple
Broad bean (Vicia faba)
Buffers
Carrot
Cleaning solvents
Eggplant (Solanum melongena esculentum)
Escherichia coli
Food additives
Food preservation
Fruit
Fungicides
Lettuce (Lactuca sativa)
Listeria monocytogenes
Potato (Solanum tuberosum)
Radish (Raphanus sativus)
Salmonella typhimurium
Sequestering agents
Stabilizing agents
Surfactants
Vegetable
Watercress
(fresh food produce wash for increasing shelf life)

IT 50-21-5, biological studies 50-81-7, L-Ascorbic acid, biological studies 50-99-7, Dextrose, biological studies 50-99-7D, D-Glucose, derivs., biological studies 52-89-1, Cysteine hydrochloride 56-40-6D, Glycine, peptides contg., biological studies 56-41-7D, L-Alanine, peptides contg., biological studies 56-81-5, 1,2,3-Propanetriol, biological studies 56-86-0, L-Glutamic acid, biological studies 56-87-1D, L-Lysine, peptides contg., biological studies 57-50-1D, Sucrose, fatty acid esters 57-55-6, 1,2-Propanediol, biological studies 59-67-6, Niacin, biological studies 60-00-4, EDTA, biological studies 60-00-4D, EDTA, salts 63-91-2D, L-Phenylalanine, peptides contg., biological studies 64-17-5, Ethanol, biological studies 64-18-6, Formic acid, biological studies 64-19-7, Acetic acid, biological studies 64-19-7D, Acetic acid, monohalogen derivs., biological studies 65-85-0, Benzoic acid, biological studies 67-56-1, Methanol, biological studies 69-72-7, biological studies 71-23-8, Propyl alcohol, biological studies 71-36-3, 1-Butanol, biological studies 71-41-0, Amyl alcohol, biological studies 73-22-3D, L-Tryptophan, peptides contg., biological studies 75-56-9D, Propylene oxide, ethylene oxide condensates 77-92-9, biological studies 79-08-3, Monobromoacetic acid 79-09-4, Propionic acid, biological studies **79-21-0**, **Peracetic acid** 87-69-4, biological studies 89-65-6, Erythorbic acid 98-11-3D, Benzene sulfonic acid, alkyl derivs. and salts 100-51-6, Benzyl alcohol, biological studies 107-21-1, 1,2-Ethanediol, biological

studies 107-21-1D, Ethylene glycol, esters 107-43-7D, Betaine, amine- and amido derivs. 108-46-3, Resorcinol, biological studies 108-46-3D, Resorcinol, substituted derivs. 108-95-2D, Phenol, alkyl ethoxylates, biological studies 110-15-6, Butanedioic acid, biological studies 110-17-8, 2-Butenedioic acid (2E)-, biological studies 110-94-1, Pentanedioic acid 124-04-9, Hexanedioic acid, biological studies 124-07-2, Octanoic acid, biological studies 124-40-3D, Dimethylamine, alkyl derivs. 134-03-2, Sodium ascorbate 136-77-6, 4-Hexylresorcinol 520-45-6, Dehydroacetic acid 532-32-1, Sodium benzoate 541-50-4D, Diacetic acid, ampho-, alkyl derivs., biological studies 994-36-5, Sodium citrate 1875-92-9D, Dimethyl benzyl ammonium chloride, alkyl derivs. 3287-99-8, Benzylammonium chloride 5138-18-1D, Sulfosuccinic acid, alkyl derivs. 6915-15-7, Malic acid 7440-09-7D, Potassium, carboxylic acid salts, biological studies 7440-23-5D, Sodium, carboxylic acid salts, biological studies 7440-70-2D, Calcium, carboxylic acid salts, biological studies 7632-05-5, Sodium phosphate 7647-01-0, Hydrochloric acid, biological studies 7647-14-5, Sodium chloride, biological studies 7664-38-2, Phosphoric acid, biological studies 7664-93-9, Sulfuric acid, biological studies 9001-92-7, Proteinase 9004-34-6D, Cellulose, derivs., biological studies 9005-25-8D, Starch, derivs., biological studies 9016-00-6, Poly[oxy(dimethylsilylene)] 9033-25-4, O-Methyltransferase 9037-29-0, Oxygenase 10043-01-3, Aluminum sulfate 10043-35-3, Boric acid, biological studies 12619-70-4, Cyclodextrin 24634-61-5, Potassium sorbate 30643-90-4, Hexanamide homopolymer 31662-68-7 58450-17-2D, Sulfosuccinamic acid, alkyl derivs.
RL: FFD (Food or feed use); BIOL (Biological study); USES (Uses)
(fresh food produce wash for increasing shelf life)

L6 ANSWER 21 OF 42 CAPLUS COPYRIGHT 2002 ACS
AN 1999:755747 CAPLUS
DN 132:49250
TI P3-topactive DES. New criteria for disinfectants in food processing plants
AU Meyer, Bernhard; Tyborski, Thomas
CS Henkel-Ecolab G.m.b.H. Co. o.H.G., Dusseldorf, Germany
SO Lebensmittelindustrie und Milchwirtschaft (1999), 120(23), 1024-1029
CODEN: LEMIEZ; ISSN: 0938-9369
PB VV-GmbH Volkswirtschaftlicher Verlag
DT Journal
LA German
RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT
AB The disinfectant properties of the **peracetic acid** -based disinfectant P3-topactive DES were investigated. Within 5 min 1-3% P3-topactive DES reduced bacterial contamination with Staphylococcus aureus, Enterococcus hirae, Pseudomonas aeruginosa, Escherichia coli, and Salmonella typhimurium at 4-10 .degree. by 5 log-steps. The fungicide properties were proven with Saccharomyces cerevisiae and Aspergillus niger, where a redn. of 4 log steps was reached within 60 min.
IT Disinfectants
Enterococcus hirae
Escherichia coli
Food industry
Listeria monocytogenes
Pseudomonas aeruginosa
Salmonella typhimurium
Staphylococcus aureus
(P3-topactive DES as disinfectant in food processing plants)
IT **79-21-0, Peracetic acid** 252979-76-3,
P3-Topactive DES
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); FFD (Food or feed use); BIOL (Biological study); USES (Uses)
(P3-topactive DES as disinfectant in food processing plants)

L6 ANSWER 22 OF 42 CAPLUS COPYRIGHT 2002 ACS
AN 1999:561247 CAPLUS
DN 132:107105
TI Behavior of enterohemorrhagic **Escherichia coli** **O157**:H7 on alfalfa sprouts during the sprouting process as influenced by treatments with various chemicals
AU Taormina, Peter J.; Beuchat, Larry R.
CS Center for Food Safety and Quality Enhancement, Department of Food, University of Georgia, Griffin, GA, 30223-1797, USA
SO Journal of Food Protection (1999), 62(8), 850-856
CODEN: JFPRDR; ISSN: 0362-028X
PB International Association of Milk, Food and Environmental Sanitarians
DT Journal
LA English
RE.CNT 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT
TI Behavior of enterohemorrhagic **Escherichia coli** **O157**:H7 on alfalfa sprouts during the sprouting process as influenced by treatments with various chemicals
AB The behavior of **Escherichia coli O157**:H7 on alfalfa seeds subjected to conditions similar to those used com. to grow and market sprouts as it is affected by applications of NaOCl, Ca(OCl)2, acidified NaClO2, acidified ClO2, Na3PO4, Vegi-Clean, **Tsunami**, Vortexx, or H2O2 at various stages of the sprouting process was detd. Application of 2,000 ppm of NaOCl, 200 and 2,000 ppm of Ca(OCl)2, 500 ppm of acidified ClO2, 10,000 ppm of Vegi-Clean, 80 ppm of **Tsunami**, or 40 and 80 ppm of Vortexx to germinated seeds significantly reduced the population of **E. coli O157**:H7. With the exception of acidified NaOCl2 at 1,200 ppm, spray applications of these chems. did not significantly reduce populations or control the growth of **E. coli O157**:H7 on alfalfa sprouts during the sprouting process. Populations of E. coli on alfalfa sprouts peaked at 6 to 7 log10 CFU/g 48 h after initiation of the sprouting process and remained stable despite further spraying with chems. The population of **E. coli O157**:H7 on sprouts as they entered cold storage at 9 .+-. 2.degree.C remained essentially unchanged for up to 6 days. None of the chem. treatments evaluated was able to eliminate or satisfactorily reduce **E. coli O157**:H7 on alfalfa seeds and sprouts. Observations on the ability of **E. coli O157**:H7 to grow during prodn. of alfalfa sprouts not subjected to chem. treatments are similar to those from a previous study in the authors' lab. on the behavior of Salmonella Stanley. The results do not reveal a chem. treatment method to eliminate the pathogen from alfalfa sprouts. Currently recommended procedures for sanitizing alfalfa seeds fail to eliminate **E. coli O157** :H7 and the pathogen can grow to populations exceeding 7 log10 CFU/g of sprouts produced using techniques not dissimilar to those used in the sprout industry.
IT Alfalfa (Medicago sativa)
Disinfectants
Food contamination
Seedling
(**Escherichia coli O157**:H7 on alfalfa sprouts response to disinfectants)
IT **Escherichia coli**
(**O157**:H7; on alfalfa sprouts response to disinfectants)
IT Germination
(sprouting; **Escherichia coli O157**:H7 on alfalfa sprouts response to disinfectants)
IT 7601-54-9, Trisodium orthophosphate 7681-52-9, Sodium hypochlorite 7722-84-1, Hydrogen peroxide, biological studies 7778-54-3, Calcium hypochlorite **232259-02-8**, **Tsunami** 232259-05-1, Vortexx

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); FFD (Food or feed use); BIOL (Biological study); USES (Uses)
(**Escherichia coli O157**:H7 on alfalfa sprouts response to disinfectants)

IT 7758-19-2, Sodium chlorite 10049-04-4, Chlorine dioxide
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); FFD (Food or feed use); BIOL (Biological study); USES (Uses)
(acidified; **Escherichia coli O157**:H7 on alfalfa sprouts response to disinfectants)

L6 ANSWER 23 OF 42 CAPLUS COPYRIGHT 2002 ACS
AN 2000:80430 CAPLUS
DN 132:290919
TI A comparison of the bactericidal efficacy of 18 disinfectants used in the food industry against **Escherichia coli O157**:H7 and Pseudomonas aeruginosa at 10 and 20 .degree.C
AU Taylor, J. H.; Rogers, S. J.; Holah, J. T.
CS Food Hygiene Department, Campden and Chorleywood Food Research Association, Chipping Campden, GL55 6LD, UK
SO Journal of Applied Microbiology (1999), 87(5), 718-725
CODEN: JAMIFK; ISSN: 1364-5072
PB Blackwell Science Ltd.
DT Journal
LA English
RE.CNT 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT
TI A comparison of the bactericidal efficacy of 18 disinfectants used in the food industry against **Escherichia coli O157**:H7 and Pseudomonas aeruginosa at 10 and 20 .degree.C
AB A no. of proprietary disinfectant products (18) used in the food industry were tested for their bactericidal efficacy against Pseudomonas aeruginosa and **Escherichia coli O157**:H7 at 20 and 10 .degree.C according to the BS EN 1276 (1997) quant. suspension test for the evaluation of bactericidal activity of chem. disinfectants and antiseptics used in food, industrial, domestic and institutional areas. At 20 .degree.C, 13 products passed at their in-use concn. (under clean and dirty conditions) against Ps. aeruginosa and 15 passed against **E. coli O157**:H7. The no. of products passing the test at 10 .degree.C was 11 and 14 for Ps. aeruginosa and **E. coli O157**:H7, resp. The products exhibiting reduced efficacy at the lower temp. were amphoterics and quaternary ammonium compds. although some of these types of products were effective at both temps. Products that passed against Ps. aeruginosa generally also passed against **E. coli O157**:H7. Taking all the results together, only 11 of the total of 18 products achieved a pass result under all the parameters tested. This work demonstrates the need for final verification of disinfectant efficacy by undertaking field trials in the food-processing environment in which the product is intended for use.
IT Detergents
(acid; comparison of the bactericidal efficacy of 18 disinfectants used in the food industry against **Escherichia coli O157**:H7 and Pseudomonas aeruginosa at 10 and 20 .degree.C)
IT Temperature effects, biological
(cold; comparison of the bactericidal efficacy of 18 disinfectants used in the food industry against **Escherichia coli O157**:H7 and Pseudomonas aeruginosa at 10 and 20 .degree.C)
IT Amphoteric materials
Antibacterial agents
Disinfectants
Escherichia coli
Pseudomonas aeruginosa

(comparison of the bactericidal efficacy of 18 disinfectants used in the food industry against **Escherichia coli** **O157**:H7 and Pseudomonas aeruginosa at 10 and 20 .degree.C)

IT Quaternary ammonium compounds, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); FFD (Food or feed use); BIOL (Biological study); USES (Uses)
(comparison of the bactericidal efficacy of 18 disinfectants used in the food industry against **Escherichia coli** **O157**:H7 and Pseudomonas aeruginosa at 10 and 20 .degree.C)

IT Antibacterial agents
(iodophors; comparison of the bactericidal efficacy of 18 disinfectants used in the food industry against **Escherichia coli** **O157**:H7 and Pseudomonas aeruginosa at 10 and 20 .degree.C)

IT 7681-52-9, Sodium hypochlorite
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); FFD (Food or feed use); BIOL (Biological study); USES (Uses)
(alone and combined with potassium hydroxide; comparison of the bactericidal efficacy of 18 disinfectants used in the food industry against **Escherichia coli O157**:H7 and Pseudomonas aeruginosa at 10 and 20 .degree.C)

IT **79-21-0, Peracetic acid**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); FFD (Food or feed use); BIOL (Biological study); USES (Uses)
(combined with hydrogen peroxide; comparison of the bactericidal efficacy of 18 disinfectants used in the food industry against **Escherichia coli O157**:H7 and Pseudomonas aeruginosa at 10 and 20 .degree.C)

IT 7722-84-1, Hydrogen peroxide, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); FFD (Food or feed use); BIOL (Biological study); USES (Uses)
(combined with **peracetic acid**; comparison of the bactericidal efficacy of 18 disinfectants used in the food industry against **Escherichia coli O157**:H7 and Pseudomonas aeruginosa at 10 and 20 .degree.C)

IT 1310-58-3, Potassium hydroxide, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); FFD (Food or feed use); BIOL (Biological study); USES (Uses)
(combined with sodium hypochlorite; comparison of the bactericidal efficacy of 18 disinfectants used in the food industry against **Escherichia coli O157**:H7 and Pseudomonas aeruginosa at 10 and 20 .degree.C)

IT 56-03-1, Biguanide 2893-78-9 10049-04-4, Chlorine dioxide
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); FFD (Food or feed use); BIOL (Biological study); USES (Uses)
(comparison of the bactericidal efficacy of 18 disinfectants used in the food industry against **Escherichia coli** **O157**:H7 and Pseudomonas aeruginosa at 10 and 20 .degree.C)

L6 ANSWER 24 OF 42 CAPLUS COPYRIGHT 2002 ACS
AN 1999:285899 CAPLUS
DN 131:115601
TI Comparison of chemical treatments to eliminate enterohemorrhagic **Escherichia coli O157**:H7 on alfalfa seeds
AU Taormina, Peter J.; Beuchat, Larry R.
CS Center for Food Safety and Quality Enhancement, Department of Food Science and Technology, University of Georgia, Griffin, GA, 30223-1797, USA
SO Journal of Food Protection (1999), 62(4), 318-324
CODEN: JFPRDR; ISSN: 0362-028X

PB International Association of Milk, Food and Environmental Sanitarians
DT Journal
LA English
RE.CNT 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT
TI Comparison of chemical treatments to eliminate enterohemorrhagic **Escherichia coli O157**:H7 on alfalfa seeds
AB The focus of this study was to det. the efficacy of various chems. in eliminating 2.04 to 3.23 log10 CFU/g of **Escherichia coli O157**:H7 from alfalfa seeds and to det. the survivability of the pathogen on seeds stored for prolonged periods at three temps. Significant (P .ltoreq. 0.05) redns. in populations of **E. coli O157**:H7 on inoculated seeds were obsd. after treatments with 500 and 1000 ppm of active chlorine (as Ca[OCl]2) for 3 but not 10 min and with .gtoreq.2,000 ppm of Ca(OCl)2 regardless of pretreatment with a surfactant. Treatment with 20,000 ppm of active chlorine failed to kill 2.68 log10 CFU/g of seeds. Acidified NaClO2 (500 ppm) was effective in reducing populations of the pathogen by >2 logs per g. Acidified ClO2 significantly reduced populations of **E. coli O157**:H7 on seeds at concns. .gtoreq.100 ppm, and 500 ppm of ClO2 reduced the pathogen from 2.7 log10 CFU/g to <0.5 CFU/g. Chlorine (as NaOCl) was not effective at concns. .ltoreq.1,000 ppm; significant redn. was achieved only after treatment with 2,000 ppm for 3 or 10 min. Notable redn. in populations was obsd. after treatment with 30 or 70% C2H5OH, but there was a dramatic decrease in germination percentage. Treatment with 0.2% H2O2 significantly reduced populations, and the organism was not detected by direct plating after treatment with .gtoreq.1% H2O2. Significant redn. in the population of **E. coli O157**:H7 occurred after treatment with 1% trisodium phosphate, 40 ppm **Tsunami** and Vortexx, and 1% Vegi-Clean. A significant decrease in the no. of **E. coli O157**:H7 on dry seeds was obsd. within 1 wk of storage at 25 and 37.degree.C, but not at 5.degree.C. Between 1 and 38 wk, populations on seeds stored at 5.degree.C remained relatively const. The pathogen was recovered from alfalfa seeds initially contg. 3.04 log10 CFU/g after storage at 25 or 37.degree.C for 38 wk but not 54 wk.
IT **Escherichia coli**
(**O157**:H7; bactericides to eliminate enterohemorrhagic **Escherichia coli O157**:H7 on alfalfa seeds)
IT Alfalfa (Medicago sativa)
Antibacterial agents
Seed
Seedling
(bactericides to eliminate enterohemorrhagic **Escherichia coli O157**:H7 on alfalfa seeds)
IT Reactive oxygen species
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); FFD (Food or feed use); BIOL (Biological study); USES (Uses)
(bactericides to eliminate enterohemorrhagic **Escherichia coli O157**:H7 on alfalfa seeds)
IT 64-17-5, Ethanol, biological studies 7601-54-9, Trisodium phosphate 7681-52-9, Sodium hypochlorite 7722-84-1, Hydrogen peroxide, biological studies 7758-19-2, Sodium chlorite 7778-54-3, Calcium hypochlorite 7782-50-5, Chlorine, biological studies 9005-65-6, Tween 80 10049-04-4, Chlorine dioxide **232259-02-8, Tsunami** (bactericide) 232259-05-1, Vortexx 232259-17-5, Vegi-Clean
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); FFD (Food or feed use); BIOL (Biological study); USES (Uses)
(bactericides to eliminate enterohemorrhagic **Escherichia coli O157**:H7 on alfalfa seeds)

L6 ANSWER 25 OF 42 CAPLUS COPYRIGHT 2002 ACS

AN 1999:384653 CAPLUS
DN 131:29735
TI Screening of antimicrobial activities of disinfectant and cleaning agents against foodborne spoilage microbes
AU Gronholm, Lara; Wirtanen, Gun; Ahlgren, Kai; Nordstrom, Katrina; Sjoberg, Anna-Maija
CS VTT Biotechnology Food Research, Espoo, Finland
SO Zeitschrift fuer Lebensmittel-Untersuchung und -Forschung A: Food Research and Technology (1999), 208(4), 289-298
CODEN: ZLFAFA; ISSN: 1431-4630
PB Springer-Verlag
DT Journal
LA English
RE.CNT 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT
AB The antimicrobial activities of six disinfectants and cleaning agents against five food and brewery spoilage microbes were studied using the 5-5-5 suspension and a surface test simulating surface disinfection in actual use. The tests were carried out using the lowest recommended concns. The surface test was performed both with and without org. soil for various exposure times. In the suspension test, almost all the disinfectant and cleaning agents had adequate antimicrobial activity, except against Bacillus spores. The peroxide-based disinfectant and the isopropanol-based cleaning agent were both ineffective against Saccharomyces cerevisiae. In the surface test without soil the hypochlorite-based disinfectant was effective after an exposure of 10 min against all the microbes tested. The isopropanol-based cleaning agent was effective against all the vegetative cells tested. In the presence of soil, hypochlorite was effective against **Listeria monocytogenes** and Pseudomonas aeruginosa. In the test performed the lubricant which contained disinfectant had no antimicrobial activity against the surface-attached contaminants tested. P. aeruginosa was the most sensitive test organism and the Bacillus spores were the, most resistant towards the agents tested.
IT 60-00-4, EDTA, biological studies 64-19-7, Acetic acid, biological studies 67-63-0, Isopropanol, biological studies **79-21-0**, **Peracetic acid** 112-34-5, Butyl diglycol 1310-73-2, Sodium hydroxide (Na(OH)), biological studies 7681-52-9, Sodium hypochlorite 7722-84-1, Hydrogen peroxide, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(antimicrobial activities of disinfectant and cleaning agents against foodborne spoilage microbes)

L6 ANSWER 26 OF 42 FSTA COPYRIGHT 2002 IFIS
AN 1999(08):J1816 FSTA
TI Comparison of chemical treatments to eliminate enterohemorrhagic **Escherichia coli O157**:H7 on alfalfa seeds.
AU Taormina, P. J.; Beuchat, L. R.
CS Correspondence (Reprint) address, L. R. Beuchat, Cent. for Food Safety & Quality Enhancement, Dep. of Food Sci. & Tech., Univ., of Georgia, Griffin, GA 30223-1797, USA. Tel. 770-412-4740. Fax 770-229-3216. E-mail lbeucha(a)cfsqe.griffin.peachnet.edu
SO Journal of Food Protection, (1999), 62 (4) 318-324, 15 ref.
ISSN: 0362-028X
DT Journal
LA English
TI Comparison of chemical treatments to eliminate enterohemorrhagic **Escherichia coli O157**:H7 on alfalfa seeds.
AB Efficacy of several chemicals in eliminating 2.04-3.23 log.sub.1.sub.0 cfu/g of **Escherichia coli O157**:H7 from alfalfa seeds and the survivability of the pathogen on seeds stored for prolonged periods at 5, 25 or 37.degree.C were determined. Significant (P .ltoreq. 0.05) reductions in **E. coli O157**:H7

populations on seeds were observed after treatments with 500 and 1000 p.p.m. of active chlorine (as Ca(OCl).sub.2) for 3, but not 10, min and with .gtoreq.2000 p.p.m. of Ca(OCl).sub.2 regardless of pretreatment with a surfactant. Treatment with 20 000 p.p.m. of active chlorine failed to kill 2.68 log.sub.1.sub.0 cfu/g of seeds. Acidified NaClO.sub.2 (500 p.p.m.) reduced populations of the pathogen by >2 logs/g. Acidified ClO.sub.2 significantly reduced populations of **E. coli O157**:H7 on seeds at concn. .gtoreq.100 p.p.m., and 500 p.p.m. reduced the pathogen from 2.7 to <0.5 cfu/g. Significant reduction was achieved with chlorine (as NaOCl) only after treatment with 2000 p.p.m. for 3 or 10 min. Notable reduction in populations was observed after treatment with 30 or 70% C.sub.2H.sub.3OH, but there was a dramatic decrease in germination percentage. Treatment with 0.2% H.sub.2O.sub.2 significantly reduced populations, and E. coli was not detected after treatment with .gtoreq.1% H.sub.2O.sub.2. Significant reduction in **E. coli O157**:H7 populations occurred after treatment with 1% trisodium phosphate, 40 p.p.m. of **Tsunami** and Vortexx, and 1% Vegi-Clean. A significant decrease in the number of **E. coli O157**:H7 on dry seeds was observed within 1 wk of storage at 25 and 37.degree.C, but not at 5.degree.C. Populations on seeds stored at 5.degree.C remained relatively constant between 1 and 38 wk but not after 54 wk. [From En summ.]

L6 ANSWER 27 OF 42 FSTA COPYRIGHT 2002 IFIS
AN 1999(12):J2763 FSTA
TI Behavior of enterohemorrhagic **Escherichia coli O157**:H7 on alfalfa sprouts during the sprouting process as influenced by treatments with various chemicals.
AU Taormina, P. J.; Beuchat, L. R.
CS Correspondence (Reprint) address, L. R. Beuchat, Cent. for Food Safety & Quality Enhancement, Dep. of Food Sci. & Tech., Univ. of Georgia, Griffin, GA 30223-1797, USA. Tel. 770-412-4740. Fax. 770-229-3216. E-mail lbeucha(a)cfsqe.griffin.peachnet.edu
SO Journal of Food Protection, (1999), 62 (8) 850-856, 23 ref.
ISSN: 0362-028X
DT Journal
LA English
TI Behavior of enterohemorrhagic **Escherichia coli O157**:H7 on alfalfa sprouts during the sprouting process as influenced by treatments with various chemicals.
AB Behaviour of **Escherichia coli O157**:H7 on alfalfa seeds subjected to conditions similar to those used commercially to grow and market sprouts as affected by [chemical treatment] applications of NaOCl, Ca(OCl).sub.2, acidified NaClO.sub.2, acidified ClO.sub.2, Na.sub.3PO.sub.4, Vegi-Clean, **Tsunami**, Vortexx or H.sub.2O.sub.2 at various stages of the sprouting process was determined. Application of 2000 p.p.m. of NaOCl, 200 and 2000 p.p.m. of Ca(OCl).sub.2, 500 p.p.m. of acidified ClO.sub.2, 10 000 p.p.m. of Vegi-Clean, 80 p.p.m. of **Tsunami** or 40 and 80 p.p.m. of Vortexx to germinated seeds significantly reduced the population of **E. coli O157**:H7. With the exception of acidified NaOCl.sub.2 at 1200 p.p.m., spray applications of these chemicals did not significantly reduce populations or control growth of **E. coli O157**:H7 on alfalfa sprouts during the sprouting process. Populations of E. coli on alfalfa sprouts peaked at 6-7 log.sub.1.sub.0 cfu/g 48 h after initiation of the sprouting process and remained stable despite further spraying with chemicals. The **E. coli O157**:H7 population on sprouts as they entered cold storage (9 .+-. 2.degree.C) remained essentially unchanged for up to 6 days. None of the chemical treatments evaluated was able to eliminate or satisfactorily reduce **E. coli O157**:H7 on alfalfa seeds and sprouts. Observations on the ability of **E. coli O157**:H7 to grow during production of alfalfa sprouts not subjected to chemical treatments are similar to those from a previous study on the behaviour of

Salmonella Stanley. Results do not reveal a chemical treatment method to eliminate the pathogen from alfalfa sprouts. Data demonstrated that currently recommended procedures for sanitizing alfalfa seeds fail to eliminate **E. coli O157**:H7 and that the pathogen can grow to populations exceeding 7 log.sub.1.sub.0 cfu/g of sprouts produced using techniques not dissimilar to those used in the sprout industry.

TN **Tsunami**; Vegi-Clean; Vortexx

L6 ANSWER 28 OF 42 FSTA COPYRIGHT 2002 IFIS
AN 1999(10):C1223 FSTA
TI Inactivation of **Listeria monocytogenes**/Pseudomonas biofilms by peracid sanitizers.
AU Fatemi, P.; Frank, J. F.
CS Correspondence (Reprint) address, J. F. Frank, Cent. for Food Safety & Quality Enhancement, Dep. of Food Sci. & Tech., Univ. of Georgia, Athens, GA 30602-2106, USA. Tel. 760-542-0994. Fax 706-542-1050. E-mail frank(a)flavor.fst.uga.ude
SO Journal of Food Protection, (1999), 62 (7) 761-765, 18 ref.
ISSN: 0362-028X
DT Journal
LA English
TI Inactivation of **Listeria monocytogenes**/Pseudomonas biofilms by peracid sanitizers.
AB The ability of **peracetic acid** and **peroctanoic acid** sanitizers to inactivate mixed-culture biofilms of a Pseudomonas sp. and **Listeria monocytogenes** on stainless steel was investigated. Types of biofilms tested included a 4 h attachment of the mixed-cell suspension and a 48 h biofilm of mixed culture formed in skim milk or tryptic soy broth. Biofilm-containing coupons were immersed in solutions of hypochlorite, **peracetic acid** and **peroctanoic acid** either with or without organic challenge. Organic challenge consisted of either coating the biofilms with milk that were then allowed to dry, or adding milk to the sanitizing solution to a 5% concn. Surviving cells were enumerated by pouring differential agar directly on the treated surfaces. Peracid sanitizers were more effective than chlorine for inactivating biofilm in the presence of organic challenge. The 48 h mixed-culture biofilm grown in milk was reduced to <3 cfu/cm.sup.2 by 160 p.p.m. of peracid sanitizer after exposure for 1 min. **Peroctanoic acid** was more effective than **peracetic acid** against biofilm cells under conditions of organic challenge. Pseudomonas and L. monocytogenes were inactivated to similar levels by the sanitizer treatments, even though Pseudomonas predominated in the initial biofilm population.
CT DISINFECTION; FOOD SAFETY; LISTERIA; MICROORGANISMS; PSEUDOMONAS; STEEL; BIOFILMS; **LISTERIA MONOCYTOGENES**; SANITIZERS; STAINLESS STEEL

L6 ANSWER 29 OF 42 FSTA COPYRIGHT 2002 IFIS
AN 2000(06):J1220 FSTA
TI Evaluation of sanitizers for killing **Escherichia coli O157**:H7, Salmonella and naturally occurring microorganisms on cantaloupes, honeydew melons, and asparagus.
AU Park, C. M.; Beuchat, L. R.
CS Correspondence (Reprint) address, L. R. Beuchat, Cent. for Food Safety & Quality Enhancement. Univ. of Georgia, Griffin, GA 30223-1797, USA. Tel. 770.412.4740. Fax 770.229.3216. E-mail lbeucha(a)cfsqe.griffin.peachnet.edu
SO Dairy, Food and Environmental Sanitation, (1999), 19 (12) 842-847, 22 ref.
ISSN: 0273-2866
DT Journal
LA English
TI Evaluation of sanitizers for killing **Escherichia coli O157**:H7, Salmonella and naturally occurring microorganisms on cantaloupes, honeydew melons, and asparagus.

AB Antibacterial activity of chlorine (200 and 2000 p.p.m.), acidified sodium chlorite (850 and 1200 p.p.m.), H.sub.2O.sub.2 (0.2 and 1%), and **Tsunami**.RTM. (40 and 80 p.p.m.) was evaluated against **Escherichia coli O157**:H7 strains, 932, H1730, F4546, E0018 and 944 and Salmonella serotypes, Agona, Enteritidis E190-88, Gaminara F2712, Michigan, Montivideo G4639 and Typhimurium, inoculated onto the surface of cantaloupes, honeydew melons, and asparagus spears. Populations of naturally occurring aerobic microoganisms, yeasts and moulds on untreated produce, and on produce treated with chlorine, acidified sodium chlorite, H.sub.2O.sub.2, **Tsunami**.RTM., or water (control), were also determined. At the highest concn. tested, chlorine, acidified sodium chlorite, and **Tsunami**.RTM. killed 2.6 to 3.8 log.sub.1.sub.0 cfu **E. coli O157**:H7 and Salmonella in cantaloupes and honeydew melons. Chlorine at 2000 p.p.m. and acidified sodium chlorite at both concn. were most effective in killing aerobic microorganisms, yeasts and moulds occurring naturally on cantaloupes and honeydew melons. The bactericidal effect of the chemicals tested was less pronounced on asparagus than on cantaloupes and honeydew melons.
TN **Tsunami**

L6 ANSWER 30 OF 42 FSTA COPYRIGHT 2002 IFIS
AN 2000(05):C0560 FSTA
TI Efficacy of sanitisers on **Listeria monocytogenes** biofilms.
AU Richards, R.
CS Dairy Ind. Quality Cent., Private Bag 16, Werribee, Vic. 3030, Australia. E-mail diqc(a)dairy.com.au
SO Food Australia, (1999), 51 (12) 624-625, 1 ref.
ISSN: 0015-6647
DT Journal
LA English
TI Efficacy of sanitisers on **Listeria monocytogenes** biofilms.
AB Control of **Listeria monocytogenes** in process environment is crucial to dairy manufacturers as to other food processors, and is complicated by formation of biofilms which can survive under conditions of limited nutrient supply. Efficacy of various sanitizers against biofilms was evaluated. Biofilms grown from wild strains of L. monocytogenes in a slurry and in pure solution were challenged with commercially formulated or tailored products for 2 and 5 min, and the pathogen was enumerated as MPN. Quaternary ammonium compounds, **peracetic acid** and quaternary compounds proved most efficacious, most treatments producing a .gtoreq.4 log kill and all being more useful over 5 than 2 min exposure. Nitric acid performed worst. Some sanitizers were more efficacious in slurry than in pure culture. Cleaning prior to sanitization was also significant.
CT DISINFECTION; FOOD SAFETY; LISTERIA; MICROORGANISMS; BIOFILMS; **LISTERIA MONOCYTOGENES**; SANITIZERS

L6 ANSWER 31 OF 42 CAPLUS COPYRIGHT 2002 ACS
AN 1998:470899 CAPLUS
DN 129:259527
TI Attachment of **Escherichia coli O157**:H7 in ground beef to meat grinders and survival after sanitation with chlorine and **peroxyacetic acid**
AU Farrell, Bridget L.; Ronner, Amy B.; Wong, Amy C. Lee
CS Food Research Institute, Department of Food Microbiology and Toxicology, University of Wisconsin-Madison, Madison, WI, 53706, USA
SO Journal of Food Protection (1998), 61(7), 817-822
CODEN: JFPRDR; ISSN: 0362-028X
PB International Association of Milk, Food and Environmental Sanitarians
DT Journal
LA English

TI Attachment of **Escherichia coli O157**:H7 in ground beef to meat grinders and survival after sanitation with chlorine and **peroxyacetic acid**

AB The potential for transfer of **Escherichia coli O157**:H7 from contaminated ground beef to grinding equipment and the inactivation of attached cells during cleaning and sanitizing was examd. Chub-packed ground beef with lean:fat ratios of 75:25, 80:20, or 90:10 was inoculated with 6 log CFU/g or 2 log CFU/g **E. coli O157**:H7 strain FRIK 910. Samples were consecutively ground in a Hobart meat grinder with stainless steel (SS) chips (1 cm2) glued to the auger housing. Chips were harvested after grinding, detergent washing with or without manual scrubbing and rinsing, sanitizing in a chlorine or **peroxyacetic acid** sanitizer, and overnight storage. Survival of **E. coli O157**:H7 was evaluated both by plate count and enrichment in trypticase soy broth. Approx. 3 to 4 log CFU/cm2 were attached to the SS after grinding with all 3 fat contents. After washing and sanitizing in a chlorine or **peroxyacetic acid** sanitizer, viable bacteria were infrequently recovered by plate count. Enrichment of chips resulted in a higher survival rate with both sanitizing treatments, indicating that cell nos. below the limit of detection (5 CFU/cm2) or potentially injured organisms remained on the surface. Manual scrubbing during the washing step reduced the recovery rate. The scrubbing step also increased the no. of passing scores assigned using an ATP bioluminescence assay of total residual soil on the chips sanitized in chlorine. Thus, plate counts alone may not be a reliable indicator of sanitation efficacy and may be validated by enrichment assay.

IT Escherichia coli
Food contamination
Luminescence, bioluminescence
Storage
Washing
(attachment of **Escherichia coli O157**:H7 in ground beef to meat grinders and survival after sanitation with chlorine and **peroxyacetic acid**)

IT Meat
(beef, ground; attachment of **Escherichia coli O157**:H7 in ground beef to meat grinders and survival after sanitation with chlorine and **peroxyacetic acid**)

IT Caseins, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(hydrolyzates; attachment of **Escherichia coli O157**:H7 in ground beef to meat grinders and survival after sanitation with chlorine and **peroxyacetic acid**)

IT 56-65-5, 5'-ATP, analysis
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(attachment of **Escherichia coli O157**:H7 in ground beef to meat grinders and survival after sanitation with chlorine and **peroxyacetic acid**)

IT **79-21-0**, **Peroxyacetic acid** 7782-50-5, Chlorine, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(attachment of **Escherichia coli O157**:H7 in ground beef to meat grinders and survival after sanitation with chlorine and **peroxyacetic acid**)

L6 ANSWER 32 OF 42 FSTA COPYRIGHT 2002 IFIS
AN 1998(11):S1848 FSTA
TI Attachment of **Escherichia coli O157**:H7 in ground beef to meat grinders and survival after sanitation with chlorine and **peroxyacetic acid**.
AU Farrell. B. L.; Ronner, A. B.; Lee Wong, A. C.

CS Correspondence (Reprint) address, A. C. Lee Wong, Dep. of Food Microbiol. & Toxicol., Univ. of Wisconsin-Madison, Madison, WI 53706, USA. Tel. 608-263-1168. Fax 608-263-1114; E-mail acwong(a)facstaff.wise.edu
SO Journal of Food Protection, (1998), 61 (7) 817-822, 32 ref.
ISSN: 0362-028X
DT Journal
LA English
TI Attachment of **Escherichia coli O157**:H7 in ground beef to meat grinders and survival after sanitation with chlorine and **peroxyacetic acid**.
AB Potential for transfer of **Escherichia coli O157**:H7 from contaminated beef mince to grinding equipment and the inactivation of attached cells during cleaning and sanitizing was examined. Chub-packed ground beef with lean:fat ratios of 75:25, 80:20 or 90:10 was inoculated with 2 or 6 log cfu/g **E. coli O157**:H7 strain FRIK 910. Samples were consecutively ground in a Hobart meat grinder with stainless steel (SS) chips (1 cm.sup.2) glued to the auger housing. Chips were harvested after grinding, detergent washing with or without manual scrubbing and rinsing, sanitizing in a chlorine or **peroxyacetic acid** sanitizer, and overnight storage. Survival of **E. coli O157**:H7 was evaluated both by plate count and enrichment in trypticase soy broth. Approx. 3 to 4 log cfu/cm.sup.2 were attached to SS chips after grinding with all 3 fat contents. After washing and sanitizing in a chlorine or **peroxyacetic acid** sanitizer, viable bacteria were infrequently recovered by plate count. Enrichment of chips resulted in a higher survival rate with both sanitizing treatments, indicating that cell numbers below the limit of detection (5 cfu/cm.sup.2) or potentially injured organisms remained on the surface. Manual scrubbing during the washing step reduced the recovery rate. The scrubbing step also increased the number of passing scores assigned using an ATP bioluminescence assay of total residual soil on the chips sanitized in chlorine. The overall results indicate that plate counts alone may not be a reliable indicator of sanitation efficacy and may be validated by enrichment assay.

L6 ANSWER 33 OF 42 FSTA COPYRIGHT 2002 IFIS
AN 1995(01):P0032 FSTA
TI Sanitizer efficacy towards attached bacteria in a simulated milk pipeline system using pure and mixed cultures.
AU Mosteller, T. M.
CS Virginia Polytech. Inst. & State Univ., Blacksburg, VA 24061, USA
SO Dissertation Abstracts International, B, (1994, thesis publ. 1993), 54 (10) 4978 Order no. DA9407155, 248pp.
ISSN: 0419-4217
DT Dissertation
LA English
AB Efficacy of 6 sanitizers (chlorine (200 p.p.m), iodophor (25 p.p.m.), acid anionic (200 p.p.m.), **peracetic acid** (200 p.p.m.), and fatty acid sanitizer (200 p.p.m.)) was evaluated against bacteria attached to gasket materials of a simulated milk pipeline system. Pseudomonas fluorescens, Yersinia enterocolitica, Bacillus cereus, and **Listeria monocytogenes** were capable of significant attachment to both buna-N rubber and Teflon.RTM. gasket surfaces in either pure or mixed cultures. Differences in initial attachment rates were evident in a mixed culture of P. fluorescens, Y. enterocolitica, and L. monocytogenes in vitro. Sanitizer effectiveness depended upon bacterium, type of surface, attachment in pure or mixed culture, and evaluation system. **Peracetic acid** was the most effective sanitizer. Removal of bacteria was more pronounced on the Teflon.RTM. surface with all sanitizers used. The cleaning system (pre-rinse with warm water, application of cleaning solution, post-rinse with warm water, and application of sanitizing solution) allowed microorganisms to remain when bacteria were present as a pure culture, but resulted in the complete removal of bacteria in mixed culture. In a simulated milk pipeline system,

significant differences (P < 0.05) in initial attachment of P. fluorescens, Y. enterocolitica, and B. cereus were observed with pure and mixed cultures. The bacteria showed no preference for rubber or Teflon.RTM. gasket pieces in the simulated milk pipeline system. The sanitizers demonstrated no significant differences (P < 0.05) in effectiveness, providing a 1-2 log reduction in attached bacteria. Results from pure and mixed culture studies indicated that the cleaning system was effective in the removal of P. fluorescens from gaskets materials in a simulated milk pipeline system. Similar results were noted for B. cereus in both pure and mixed cultures. Y. enterocolitica was found to be very resistant in pure culture but not as resistant in mixed culture. [From En summ.]

L6 ANSWER 34 OF 42 CAPLUS COPYRIGHT 2002 ACS
AN 1994:626232 CAPLUS
DN 121:226232
TI Antimicrobial efficacy of a new organic acid anionic surfactant against various bacterial strains
AU Restaino, Lawrence; Frampton, Elon W.; Bluestein, Richard L.; Hemphill, Jenifer B.; Regutti, Robert R.
CS R and F Lab., Bridgeview, IL, 60455, USA
SO Journal of Food Protection (1994), 57(6), 496-501
CODEN: JFPRDR; ISSN: 0362-028X
DT Journal
LA English
AB The surface sanitizing properties of a buffered org. acid anionic surfactant (BOAAS) was compared with six traditional sanitizers (org. chlorine - 100 ppm, two iodophors - 25 ppm, **peroxyacetic acid** - 483 ppm, acid anionic - 230 ppm, and a quaternary ammonium compd. - 150 ppm) in its ability to reduce Staphylococcus aureus on an inoculated Formica surface. In the absence of org. material, the traditional sanitizers were not significantly different (P > 0.05) from water in reducing S. aureus at time 0, whereas .gtoreq. 1.2% of the BOAAS reduced a significantly greater (P < 0.05) no. of bacteria. When compared with water over 60 min, only the BOAAS significantly reduced (P < 0.05) S. aureus cells. Sixty minutes after exposure, a 1.75% concn. of the BOAAS was > 100.times. more effective than org. chlorine. Overall, the org. material reduced the effectiveness of the traditional sanitizers and BOAAS. In the presence of 0.5% protein, BOAAS levels .gtoreq. 0.6% significantly (P < 0.05) reduced more S. aureus cells than the quaternary ammonium sanitizer immediately after application. BOAAS concns. .gtoreq. 0.6% were significantly (P < 0.05) more effective in reducing S. aureus during a 60 min exposure than the org. chlorine sanitizer. In a sep. efficacy study, a BOAAS concn. of 0.6% killed >5 logs of S. aureus, Salmonella typhimurium, Pseudomonas aeruginosa and **Listeria monocytogenes** cells after 30 s exposure.

L6 ANSWER 35 OF 42 FSTA COPYRIGHT 2002 IFIS
AN 1994(11):C0015 FSTA
TI Antimicrobial efficacy of a new organic acid anionic surfactant against various bacterial strains.
AU Restaino, L.; Frampton, E. W.; Bluestein, R. L.; Hemphill, J. B.; Regutti, R. R.
CS R & F Laboratories, 7510 W. 99th Place, Bridgeview, IL 60455, USA
SO Journal of Food Protection, (1994), 57 (6) 496-501, 28 ref.
ISSN: 0362-028X
DT Journal
LA English
AB Surface sanitizing properties of a buffered organic acid anionic surfactant (BOAAS) were compared with those of 6 traditional sanitizers (organic chlorine (100 p.p.m.), 2 iodophors (25 p.p.m.), **peroxyacetic acid** (483 p.p.m.), acid anionic (230 p.p.m.), and a quaternary ammonium compound (150 p.p.m.)) in their ability to reduce Staphylococcus aureus [ATCC 6538] on an inoculated Formica

surface. In the absence of organic material, traditional sanitizers were not significantly different (P > 0.05) from water in reducing S. aureus at time 0, whereas .gtoreq.1.2% of the BOAAS reduced a significantly greater (P < 0.05) number of bacteria. When compared with water over 60 min, only the BOAAS significantly reduced (P < 0.05) S. aureus cells. 60 min after exposure, a 1.75% concn. of the BOAAS was >100x more effective than organic chlorine. Overall, organic material reduced effectiveness of the traditional sanitizers and BOAAS. In the presence of 0.5% protein, BOAAS levels .gtoreq.0.6% significantly (P < 0.05) reduced more S. aureus cells than the quaternary ammonium sanitizer immediately after application. BOAAS concn. .gtoreq.0.6% were significantly (P < 0.05) more effective in reducing S. aureus during a 60 min exposure than the organic chlorine sanitizer. In a separate efficacy study, a BOAAS concn. of 0.6% killed >5 logs of S. aureus, Salmonella typhimurium, Pseudomonas aeruginosa, and **Listeria monocytogenes** cells after 30 s exposure.

L6 ANSWER 36 OF 42 CAPLUS COPYRIGHT 2002 ACS
AN 1993:467847 CAPLUS
DN 119:67847
TI Sanitizer efficacy against attached bacteria in a milk biofilm
AU Mosteller, T. M.; Bishop, J. R.
CS Dep. Food Sci. Technol., Virginia Polytech. Inst. and State Univ., Blacksburg, VA, 24061, USA
SO Journal of Food Protection (1993), 56(1), 34-41
CODEN: JFPRDR; ISSN: 0362-028X
DT Journal
LA English
AB Pseudomonas fluorescens, Yersinia enterocolitica, and **Listeria monocytogenes** were shown to readily attach to both rubber and Teflon surfaces. Sanitizer efficacy testing done in the lab. with nonadherent bacteria could lead to false assumptions as to the sanitizer's true effectiveness under processing conditions where cells may be attached. The objectives in this study were: (a) evaluate the efficacy of in-use concns. of sanitizers on bacteria attached to gasket materials, (b) compare bacterial attachment to rubber and Teflon gaskets, (c) examine different methods of enumeration, and (d) compare sanitizer efficacy on attached and suspended bacteria. The goal redn. for all of the sanitizers tested was .gtoreq.3 log cycles or 99.9%. Results indicated that iodophor, hypochlorite, acid anionic, **peroxyacetic acid**, fatty acid, and quaternary ammonium sanitizers failed to provide an adequate redn. in the nos. of attached bacteria at levels of 104 to 105/mm2 in most cases. The test organisms attached in slightly higher nos. in the rubber surface vs. Teflon. Plate counts, impedance microbiol., and the direct epifluorescent filter technique were tested as methods of enumeration. Impedance microbiol. was the best method of enumeration, since it allowed the estn. of both reversibly and irreversibly attached bacteria. The efficacy of sanitizers vs. a bacterial suspensions resulted in a .gtoreq.5 log-cycle redn. The same concns. were relatively ineffective against the attached bacteria. The goal redn. was reached on the Teflon surface with the iodophor, hypochlorite, and fatty acid sanitizers with log-cycle redn. in the no. of Yersinia enterocolitica of 3.09, 3.19, and 3.31, resp. Pseudomonas fluorescens was reduced by 3.16 on both the rubber and Teflon surfaces when exposed to the hypochlorite sanitizer.

L6 ANSWER 37 OF 42 FSTA COPYRIGHT 2002 IFIS
AN 1993(06):P0019 FSTA
TI Sanitizer efficacy against attached bacteria in a milk biofilm.
AU Mosteller, T. M.; Bishop, J. R.
CS Correspondence (Reprint), address, J. R. Bishop, Dep. of Food Sci. & Tech., Virginia Polytechnic Inst. & State Univ., Blacksburg, VA 24061, USA
SO Journal of Food Protection, (1993), 56 (1) 34-41, 20 ref.
ISSN: 0362-028X
DT Journal

LA English
AB A study was undertaken to: evaluate efficacy of in-use concn. of sanitizers on bacteria attached to gaskets in dairies; compare bacterial attachment to rubber vs. Teflon.RTM. gaskets; examine different methods of bacterial enumeration; and compare sanitizer efficacy on attached and suspended bacteria. Iodophore, hypochlorite, acid anionic, **peroxyacetic acid**, fatty acid and quaternary ammonium sanitizers failed to provide adequate reduction in numbers of attached bacteria at levels of 10.sup.4-10.sup.5/mm.sup.2. Test organisms (Pseudomonas fluorescens, Yersinia enterocolitica and **Listeria monocytogenes**) attached in slightly higher numbers to the rubber than the Teflon.RTM. surfaces. Impedance microbiology permitted estimation of both reversibly and irreversibly attached bacteria and was thus preferred to other enumeration methods tested, i.e., plate counts or the direct epifluorescent filter technique. Sanitizers were more effective against bacterial suspensions than against attached bacteria. On a Teflon.RTM. surface, the iodophor, hypochlorite and fatty acid sanitizers provided >3 log cycles or 99.9% reduction in numbers of Y. enterocolitica. Hypochlorite resulted in >3 log/cycle reduction in numbers of P. fluorescens on both rubber and Teflon.RTM. surfaces. [From En summ.]

L6 ANSWER 38 OF 42 CAPLUS COPYRIGHT 2002 ACS
AN 1993:467834 CAPLUS
DN 119:67834
TI Biofilms and disinfection. Development of a microorganism carrier-surface method
AU Maris, P.
CS Lab. Med. Vet., Cent. Natl. Etud. Vet. Aliment., Fougeres, 35133, Fr.
SO Sciences des Aliments (1992), 12(4), 721-8
CODEN: SCALDC; ISSN: 0240-8813
DT Journal
LA English
AB The development of a new method to study the activity of disinfectants on surfaces is described. In the presence of milk or calf serum, biofilms form within 24 h and had been used to demonstrate the good reproducibility of the method. Six bacterial strains (**Listeria monocytogenes**, Escherichia coli, Staphylococcus aureus, Enterococcus hirae, Pseudomonas aeruginosa, Salmonella typhimurium) and 3 disinfectants (quaternary ammonium + aldehydes, sodium hypochlorite, **peracetic acid**) were used in comparisons with results obtained with std. NF T 72-190. Bactericidal concns. 2-10-fold higher were required to disinfect biofilms.

L6 ANSWER 39 OF 42 FSTA COPYRIGHT 2002 IFIS
AN 1993(03):C0065 FSTA
TI Biofilms and disinfection. Development of a microorganism carrier-surface method.
AU Maris, P.; Fresnel, R.
CS Cent. Nat. d'Etudes Vet. et Alimentaires, Lab. des Med. Vet., Javene, 35133 Fougeres, France
SO Sciences des Aliments, (1992), 12 (4) 721-728, 16 ref.
ISSN: 0240-8813
DT Journal
LA English
SL French
AB Development of a new method to study the activity of disinfectants on surfaces [e.g. in the food industry] is described. In the presence of milk or calf serum, biofilms form within 24 h and [may be used to assess bactericidal action of disinfectants]. 6 bacterial strains (**Listeria monocytogenes**, Escherichia coli, Staphylococcus aureus, Enterococcus hirae, Pseudomonas aeruginosa, Salmonella typhimurium) and 3 disinfectants (quaternary ammonium + aldehydes, sodium hypochlorite, **peracetic acid**) were used in comparisons with results obtained with standard NF T 72-190. Bactericidal concn. 2- to

20-fold higher were required to disinfect biofilms [than bacterial suspensions].

L6 ANSWER 40 OF 42 FSTA COPYRIGHT 2002 IFIS
AN 1989(12):S0023 FSTA
TI [Control of Listeria, Campylobacter and Yersinia: a disinfection problem?] Bekaempfung von Listeria, Campylobacter and Yersinia ein Desinfektionsproblem?
AU Orth, R.; Mrozek, H.
CS Henkel KGaA, Postfach 11 00, D-4000 Duesseldorf 1, Federal Republic of Germany
SO Fleischwirtschaft, (1989), 69 (6) 977-979, 1032, 13 ref.
ISSN: 0015-363X
DT Journal
LA German
SL English
AB Problems with **Listeria monocytogenes**, Campylobacter jejuni and Yersinia enterocolitica in the meat industry, etc. are discussed; reasons for the increased significance of these species are considered. Comparative trials on these 3 spp. and other bacteria commonly occurring in meat showed that normal disinfectants based on active Cl, quaternary ammonium compounds or **peracetic acid** were as effective against Listeria, Campylobacter and Yersinia spp. as against the usual bacteria occurring in meat products and processing facilities. Practical advice on cleaning and disinfection of meat industry equipment is given.

L6 ANSWER 41 OF 42 FSTA COPYRIGHT 2002 IFIS
AN 1990(04):S0015 FSTA
TI Is the control of Listeria, Campylobacter and Yersinia a disinfection problem?
AU Orth, R.; Mrozek, H.
CS Henkel KGaA, Postfach 11 00, D-4000 Duesseldorf 1, Federal Republic of Germany
SO Fleischwirtschaft, (1989), 69 (10) 1575-1576, 13 ref.
ISSN: 0015-363X
DT Journal
LA English
AB Studies were conducted to assess the resistance of **Listeria monocytogenes**, Campylobacter jejuni and Yersinia enterocolitica to commercial disinfectants based on NaOCl, quaternary ammonium compounds or **peracetic acid**. Trials at 5 and 20.degree.C and with various active ingredient concn. are reported. For all 3 disinfectant types, disinfection regimes sufficient to eliminate the standard contaminant meat microflora were also sufficient to eliminate Listeria, Campylobacter and Yersinia spp. These 3 genera therefore present no special disinfection problems. General aspects of meat hygiene and disinfection in meat processing facilities are briefly considered.

L6 ANSWER 42 OF 42 FSTA COPYRIGHT 2002 IFIS
AN 1990(12):C0005 FSTA
TI Use of the European suspension test (EST) to evaluate disinfectants against pathogenic organisms of particular concern to poultry and 'high risk' food processing.
AU Holah, J. T.
CS Campden Food & Drink Res. Ass., Chipping Campden GL55 6LD, UK
SO Technical Memorandum, Campden Food & Drink Research Association, (1989), No. 560, 54pp., 5 ref.
DT Journal
LA English
AB Effectiveness of 16 commonly used disinfectants against **Listeria monocytogenes**, Salmonella enteritidis, Yersinia enterocolitica and Campylobacter jejuni was assessed using a modified protocol of the EST European suspension test. Examples of iodophors, quaternary ammonium

compounds, **peracetic acid**, amphoterics and an alkaline/chlorine detergent/sanitizer were shown to reduce test organism concn. by 5 log orders in the presence of both high and low soil levels, whilst hypochlorites and a second alkaline/chlorine detergent/sanitizer achieved a 5 log reduction only in the presence of low soil levels. The least effective of the disinfectant types tested were the biguanides, of which one failed at both soil levels and another achieved a 5 log reduction of test organisms only at the lower soil level. Results suggested that, providing factory surfaces are first adequately cleaned to remove organic material, the vast majority of disinfectants currently used in the food industry are likely to be active against suspensions of the pathogens of concern as tested. The repeatability of tests using L. monocytogenes, S. enteritidis and Y. enterocolitica was assessed by comparing their total within-day and between-day error with the total error of the current standard EST test organisms. Little difference between the errors of the EST test organisms and selected pathogens was observed, which suggested that in terms of repeatability, the selected pathogens could be incorporated into the EST protocol, if so required.